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ADMINISTRATIVE REFORMS COMMISSION

सत्यमेव जयते

REPORT

OF THE

PARLIAMENTARY SEMINAR ON AGRICULTURAL ADMINISTRATION

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MAY 1968

CONVENOR

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RESEARCH STAFF

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INTRODUCTION

The Government of India constituted the Administrative Reforms Commission to examine the public administration of the country and make recommendations for reforms and reorganisation where necessary. In regard to the Agricultural Administration it was asked to study (i) the role of the Ministry of Food and Agriculture and other Ministries concerned with agricultural production, and coordination between them ; (ii) Inter-relationship between the State Agriculture Departments, Community Development Organisations, and other organisations concerned with agricultural production in the State ; (iii) Organisation for agricultural administration at the State and district levels and (iv) coordination between research and extension organisations. The main motive was to examine the public administration of the country to make it a fit instrument for the development of agriculture on the basis of science and technology.

The Commission appointed a Study Team on Agricultural Administration on the 17th July, 1966 which submitted its Report to the Commission on the 2nd September, 1967. The Commission has now directed that the recommendations of the Study Team be considered in a Seminar consisting of the Members of Parliament who have necessary knowledge and interest in agricultural administration so that their mature thinking and experience would guide the Commission in its final decisions.

Shri N. Sri Rama Reddy, M.P., was appointed the Convenor of the Seminar and about 60 Members of Parliament of both houses agreed to participate in the Seminar on the invitation sent to them.

In view of the importance of the subject and to ensure that all important recommendations made by the Study Team were given due consideration, it was felt that specific issues having relevance to the recommendations should be posed in the Seminar together with such issues as were considered necessary so that the recommendations of the Seminar would ultimately have a bearing on formulating an administrative pattern at various levels keeping in view the terms of reference of the Commission. The subject was broadly discussed under important headings-Agricultural Research, Education & Training, Extension, Administration, Production programmes, Fisheries and Forestry. The recommendations of the Seminar have been compiled in statement under above headings to show the issues raised for discussion, the recommendations made by the Study Team and also the recommendations of the Seminar so that a clear picture of the administrative set-up needed could be arrived at. This procedure is considered to be helpful to Commission to evolve a suitable agricultural administrative pattern according to their best lights. Organisational charts proposed by the Study Team and the Seminar together with existing set up have been prepared and appended at appropriate places.

CHAPTER I

AGRICULTURAL RESEARCH ADMINISTRATION

Agriculture, Animal Husbandry, fisheries and forestry contribute nearly 50 per cent to our national income. About 70% of the people depend on this sector of our economy. Therefore, unless progress in this sector is achieved in a spectacular way, the country cannot make any advancement. This is a well-known truth. Unfortunately, we have not yet been able to produce enough of foodgrains, nor meat nor milk products to feed the nation upto a level of reasonable standard. Most of our raw materials for industries are derived from agriculture. Agricultural products contribute to our export trade as well, to the extent of more than 50 per cent. Therefore, progress in this sector is the real progress of India.

Research is the "*sine-qua-non*" of progress. It is the corner-stone for development. Agricultural development depends on the continuous flow of new varieties of seeds ; new methods of agronomy, plant protection, etc. Agriculture Departments, however well established and competent, cannot make much progress unless they are backed by sufficient and problem-oriented agricultural research findings.

The nation has to concentrate on increased production of foodgrains, commercial crops, animal products and forestry products to attain self-sufficiency, to cover gaps, to provide for creation of buffer stocks, to meet emergencies, to adequately make available raw materials to the expanding agro-based industries and also to leave considerable surplus for export to earn foreign exchange. This demands a high level of production. Knowledge of science and technology about seeds, implements, agronomy, fertilizers, pest control, etc., should be master minded. Any gap in our knowledge in this sector would lead to disastrous results. Besides, it would also act as a set-back to progress and modernisation of agriculture. In this respect the Indian Council of Agricultural Research and concerned institutes/agricultural universities should identify long-range researches which are problem-oriented and capable of giving detailed information to fill up gaps in our knowledge. On the whole, the research results should be fruitful and easily acceptable and cover all aspects of important inputs *viz.* improved seeds, fertilizers, pesticides, improved implements besides storage and marketing facilities.

The Indian Council of Agricultural Research is now recognised as the national organisation for agricultural research and education and has been reorganised as an autonomous body under the Registration of Societies Act, 1860. At the State level, work relating to research and education is being taken up in varying degrees in different States by the Agricultural Universities. Nine such universities have already been established.

The progress of research has been reviewed earlier by many committees *viz.*, Joint Indo-American teams, Cummings Committee on Agricultural Universities, the Agricultural Research Review Team and the High Level Committee, etc. Some among the various lacunae pointed out by them are :

(i) Shortfalls both in coverages and incentives on research.

(ii) Necessity to classify the existing research stations to reduce their number, avoid duplication and improve quality and development and strengthen them on regional basis.

(iii) To define precisely the roles of the Central and State institutions and of the I.C.A.R. in the sphere of agricultural research.

(iv) Central institutions should be 'quality' institutions, concerning themselves with national problems and fundamental research including methodology and testing of innovations released in other countries.

(v) I.C.A.R. should function as a truly co-ordinating and evaluating agency initiating new research work, strengthening research work in Central, regional or State spheres.

The Study Team on Agricultural Administration appointed by the Administrative Reforms Commission have made certain recommendations. Arising out of the study of these and of prevailing systems in some of the countries and taking into consideration the pressing needs of our country it has become essential to consider in detail the pattern of agricultural research organisation at various levels. These would, of course, involve research problems relating to agriculture, animal sciences and forestry.

For the purpose of detailed consideration of the problems connected with research in agriculture, animal sciences and forestry, it was considered necessary that framing of issues on various aspects of research as fully as possible should precede the discussions in the Seminar instead of posing the voluminous report and recommendations of the Study Team all at one time. It was considered that the final recommendations as emerging out of the discussions would enable the Seminar to determine the administrative set up required for the main objective of maximisation of production based on science and technology. The following pages give a comparative statement indicating the issues thus raised, the recommendations made by the Study Team on Agricultural Administration and also those made by the Seminar (pp. 15-16).

For a proper appraisal of agricultural research short notes with organisation charts on the various institutions in other countries and in India are attached. These are :

(i) Agricultural Research Service in U.S.A. (pp. 16-19)

(ii) Research Branch, Canada (pp. 20-21)

(iii) Indian Council of Agricultural Research (pp. 22-37)

(iv) Indian Agricultural Research Institute (pp. 38-43)

(v) Indian Veterinary Research Institute (pp. 44-47)

(vi) National Dairy Research Institute (pp. 48-51)

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AGRICULTURAL RESEARCH ADMINISTRATION

Comparative Statement showing the issues raised for Discussion in the Seminar and the recommendations of the Study Team on Agricultural Administration and recommendations made by the Seminar.

Sl. No.	Issues for Seminar	Recommendation of the Study Team on Agricultural Administration	Recommendations of the Seminar
1	2	3	4
1	Should there be a Minister of State under Cabinet Minister in charge of research, education and training in agriculture, animal sciences and forestry?		It was considered that a Minister of State should be placed exclusively in charge of agricultural research, education and training in order to make the entire structure more efficient. He should assist the Cabinet Minister in planning research in agriculture, animal sciences, forestry, education and training. Such an arrangement prevails in developed countries like USA, USSR, Canada, Japan and has been found to yield good dividends.
2	The organisational structure of ICAR at present (pp. 31-32) Should there be any change in its structure and functions?	The ICAR should be the only coordinating and sponsoring body for all aspects of research in agricultural sciences. It should not undertake research directly. (Rec. 102).	(a) The organisational structure of ICAR as at present was considered satisfactory. It was, however, felt that one agricultural economic research wing under a highly merited officer either of the rank of Deputy Director General or below should be added for the purpose of agricultural economics research and statistics generally and also for various research programmes in particular.

			(b) The ICAR should not only be the coordinating and sponsoring body for all aspects of research in agricultural sciences but should also be directly responsible for all research work in the country.
3	National Institutes and their structure (IARI, IVRI, NDRI) (pp. 42-43, 47, 51). Whether the present institutes fulfil the needs of research requirements in agriculture, animal sciences and dairying? If not, what should be the recommendations?	..	IARI, IVRI and NDRI as presently constituted are satisfactory for the purpose of research, education and training. However, IVRI and NDRI should also be accorded the status of a University like I.A.R.I.
4	Whether Central Institutes require any modifications administratively or otherwise?	..	..
5	Could the Forestry Division at present in the Department of Agriculture be more advantageously transferred to the ICAR with research and development?	..	The research aspects concerning forestry should be transferred to the ICAR in view of the fact that most of this aspect of research is akin to the agricultural research including research on preservation of timber, treatment and manufacturing processes, etc. Development and commercial exploitation of forestry may be retained by the Department of Agriculture.
6	Whether ICAR should be given statutory recognition through an act of Parliament defining the status and role of ICAR *vis-a-vis* the Ministry of Food, Agriculture, Community Development and Cooperation.	The ICAR should be given a statutory recognition by a Parliament Act. (Rec. 103).	The recommendation of the Study Team was strongly supported.
7	What should be the relationship between ICAR and Agricultural universities and the State departmental research	There should be better and clear coordination between the ICAR and other organisations pre-	In addition to the recommendation of the Study Team, it was considered that if ICAR was to be held directly responsible for all research

1	2	3	4
	stations with regard to promotion of research in agriculture, animal sciences and forestry?	sently engaged in promoting and conducting research on aspects allied to agriculture. The ICAR should be the agency for bringing about this coordination. (Rec. 107)	activities, it should have necessary overall control and supervision over the agricultural universities and research stations in the States.
8	Should ICAR play the same role and functions as UGC with control on Central research institutions, agricultural universities and State research stations?	..	ICAR should be given the same role and functions as University Grants Commission with control on central research institutions, agricultural universities and State research stations in matters of financial grants as well as technical control and supervision including recognition.
9	Should ICAR also have the functions of— (i) allotment of finances to research schemes and (ii) Supervision and control of research.	The ICAR should be the only coordinating and sponsoring body for all aspects of research in agricultural sciences. It should not undertake research directly. (Rec. 102)	(i) In addition to the recommendation of the Study Team, it was felt that (a) for schemes sponsored by ICAR in all research institutes financial grants should be given on hundred percent basis and (b) where schemes originated from the State level, it would be the discretion of the ICAR to determine the percentage of financial grant for such schemes. (ii) In all cases, supervision, control and review will rest with ICAR.
10	Should D.G. of ICAR have powers to sanction research schemes requiring immediate attention on emergency basis?	..	It was felt that D.G., ICAR, should be empowered to issue financial sanctions on research schemes requiring immediate attention when ICAR is given statutory recognition. If, however, it is not so, the D.G., ICAR, should have the necessary powers to sanction schemes requiring immediate attention on emergency basis.

11	Should the following be transferred to ICAR? :— (i) Central Food Technological Research Institute; (ii) Central Sugarcane Research Institute, and (iii) Central Leather Research Institute?	..	The Central Food Technological Research Institute, Central Sugarcane Research Institute and the Central Leather Research Institute should be transferred to the ICAR. The nature of research and problems concerned being similar, if not the same, as the ones already handled by the ICAR.
12	Would ICAR functions improve if it is supported by a "Survey Planning and Coordination Cell" on the lines of Research Survey Planning Division in CSIR, or would Economics & Statistics Directorate be sufficient?	..	It was felt that a Survey Planning and Coordination Cell should be created and operated under ICAR in close consultation with the Ministry. This could be attached to the D.D.G. attached to the Economics and Statistics division which is already proposed.
13	Should ICAR be manned by a cadre service of scientists with time-scale of pay or reward in the promotion should be given in desirable cases ?	(i) Agricultural scientists should not be fitted into any particular cadre. Every scientist should be individually recognised. We are not in favour of bringing their status down by fitting them into All India Agricultural Research Service or any other cadre. (Rec. 111) (ii) Agriculutral scientists should be placed on time-scales of pay so that they need not be stuck up for want of vacancies at higher level. There should not be any bar for the creation of supernumerary posts to retain competent scientists in agricultural research work. (Rec. 112)	It was felt that recommendations of the Study Team were not clear. ICAR should, however, be manned by a cadre service of scientists with time-scale of pay on par with Indian Administrative Service with recognition of outstanding work, by grant of "merit increments".

1	2	3	4
		(iii) The emoluments of the agricultural scientists should be in no way inferior to those drawn by other services including the Indian Administrative Service. In fact, there is every justification for providing the agricultural scientists with scales of pay and prospects better than in the Indian Administrative service. (Rec. 113) (iv) Immediate steps should be taken to improve the working conditions of agricultural scientists in the country. They should be given more freedom of work and better facilities. (Rec. 110)	
14	Would it be desirable to introduce a system of appointing specialists of recognised eminence on contract basis for special disciplines in place of cadre service as is the case in USA ?	There should be provision for appointing reputed scientists on contractual basis for specified periods with the provision for renewing the contract at the end of the period subject to their performance and mutual agreement. (Rec. 115).	Eminent specialists may be appointed on contractual basis.

15	(a) Should Review Committee of experts be appointed by ICAR to examine the work done institution-wise? (b) Would it be better if such review committees are appointed by the Government? Should this review committee include farmers of reputed scientific talent? (c) Whether evaluation of individual schemes by Expert Committee appointed by ICAR is also necessary with a view to assess the achievements and objectives wherever necessary? Should farmers of reputed talent be associated with such reviews?	(i) An expert ecommittee should review the various existing regional and sub-stations maintained by the Centre. Those, which are found to be not working efficiently should be closed down and the rest handed over to the States. The Centre should confine itself to national and all-India institutes. (Rec.104) (ii) The ICAR should set up high level expert committees in different subject matter areas to critically review the progress of research work with a view to avoid duplication and overlapping. These committees should also consider the proposals for starting new all-India institutes which are presently before the Ministry of Food & Agriculture. While Starting the new institutes, it should be ensured that the facilities available on the existing farms, research stations and institutions are fully utilised. (Rec. 106) (iii) A review of all research stations and farms currently being run by the Centre should be made by competent body of Experts and	(a), (b) and (c). While disagreeing with the Study Team's recommendation that the Centre should confine itself to the national and All-India institutes, the Seminar is of the view that in addition to the recommendations of the Study Team, it was suggested that Review Committees consisting of eminent scientists should be appointed by the Central Government (not ICAR) periodically to review the work done scheme-wise and institution-wise both at the Centre and State level. It would be advantageous if experienced farmers with scientific knowledge were also associated with these committees. Such reports should be critically examined at the ministerial level and action needed should be taken without delay. Such steps will stimulate better performance of the institutions while also ensuring a check on them.

1	2	3	4
		action should be taken to close down such of the stations and farms which are not running on reasonable standards, and the remaining should be handed over to the States. The Centre should maintain only national and all-India institutes and farms. (Rec. 101) (iv) There should be provision for annual report and critical assessment of research done both in the States and Central institutions by selected reputed scientists for each year for each discipline. Such reports would be of value to all scientists, besides being invaluable in planning, research programmes both of short term & long term basis after a review by high powers panel of scientists in the concerned discipline. (Rec. 119)	
6	What facilities should be created for frequent meetings of the scientists working in different disciplines for exchange of knowledge?	Fraternities of agricultural scientists in different disciplines should be promoted and given all facilities for meeting periodi-	While agreeing with the recommendation of the Study Team it was felt that such "get together" should be biennial and, if necessary, annual and only those should participate who have

		cally for their professional advancement. This would help in bringing them together. It will be a great boost to their morale. (Rec. 114)	made useful contribution and had produced papers which were meritorious for discussion. The final proceedings should be made available to all concerned.
17	Whether the present method of selection of problems and the agencies that are utilised for research undertakings are considered satisfactory ?	..	The present method of selection of problems was not considered satisfactory. It was suggested that problems for research should come from various sources and especially from the fields. It should be a two-way traffic and he useful results should be quickly transmitted to the field through extension agency. The Survey Planning and Coordination Cell should provide data selecting problems and determining priorities.
18	What relationship should exist between research and development and extension ?	It is considered under Chapter Extension Issue No. 4 refers.	One view was that agricultural universities/research institutes should have subject matter specialists upto district level under their technical and administrative control. This was not acceptable to the Seminar because firstly huge number of specialists like agronomist, soil chemist, entomologist, etc. on agriculture side with similar range on animal husbandry, fisheries, etc. will be required and secondly there will be a diarchy in administration which is not conducive to discipline or efficiency. If universities are made directly responsible for extension, the size of the universities would unduly be too big and under the present circumstances it would not be practical. The district level officers who are also technically qualified persons may, on the other hand, could more advantageously be made use of

1	2	3	4
			by periodical training by refresher courses at the universities or research institutes. This should serve the needs of extension sufficiently and well.
19	Should State level research be handed over to the agricultural universities wherever the latter are located merging the State research institutions with agricultural universities?	(i) Research work in all aspects of agricultural sciences should be made the concern of agricultural universities and the anomaly in regard to the pattern of assistance for the agricultural research schemes which exist today should be removed immediately. (Rec. 108). (ii) Agricultural universities should be started in the remaining states also at the earliest possible time, if possible, within the Fourth Five Year Plan itself. Towards this end the Centre should take immediately steps in working out the financial arrangements necessary for the States to start these universities. The Centre should make all promotional efforts to realise this objective. (Rec. 100)	The recommendation of the Study Team were accepted. Smaller States and Union Territories which may not have the resources to start an agricultural university be attached to the neighbouring States with agricultural universities

20	Whether basic research should also be undertaken by Central Research Institutes?	..	It was considered that basic research was unavoidable for any research institutes. Applied research should after all originate from basic research and hence basic research cannot be altogether avoided.
21	Whether a national library on agriculture, animal sciences and forestry on the model of USA should be set up?	..	A well equipped National Library on agriculture, animal sciences and forestry should be maintained at a central place, as an independent unit under the Central Ministry. Facilities for translation into regional languages should also be made available.
22	Whether soil testing facilities are adequate for the new science and technology that has been introduced in agriculture and what should be the type of organisation for this ?		There should be adequate soil testing facilities available to the farmers at the block level and this should be the responsibility of the Agriculture Department and not I. C. A. R. If possible a permanent register of soil survey, field wise should be maintained as a guide for proper and judicious application of fertilizers and treatment of soil.
23	Whether soil survey organisation at present functioning is adequate to cope with the needs of the agricultural situation in the country ?		
24	Should research carried on by Boards, such as Coffee Board, Tea Board, Rubber Board, Silk Board be handed over to ICAR ?	The research work done by the All India Boards, such as Coffee Board, Tea Board etc., should be controlled by the Agricultural universities in their respective States. The funds for research on these crops may continue to be released by the respective Boards but these funds should pass through the agricultural universities. (Rec. 105)	There would be more coordinated approach if research carried on by Boards such as Tea, Coffee, Rubber etc., is taken over by the ICAR instead of agricultural universities. Since these Boards were constituted by the Central Government and worked under their supervision and guidance the question of transferring such research to the agricultural universities do not arise. The funds for research on these crops should be released by the respective Boards through the ICAR and not agricultural universities.

1	2	3	4
25	The present system of financial allocations to the ICAR is rather cumbersome. Would it not help ICAR if block funds are sanctioned and greater freedom is given to it for sanctioning research schemes independently without the necessity of obtaining clearance from the Expenditure Finance Committee (Ministry of Finance) as in the case of CSIR?	(i) The financial allocations to agricultural research have been very meagre, compared to its needs in the country. Adequate funds should be ensured to agricultural research both at the Centre and in the States. These funds should be given on block grants basis, and should be statutorily provided. (Rec. 116) (ii) When once the funds are provided to the Indian Council of Agricultural Research at the Centre and the Agricultural Universities in the States and the budget approved, there should not be any interference by Government in regard to the utilisation of such funds. (Rec. 118)	It was understood that many of the present difficulties in regard to financial allocations would be solved when ICAR is given a statutory recognition. The D.G., ICAR, would assume more direct responsibility. If, however, the legal position under the statutory recognition does not permit this, the Study Teams' recommendations may be implemented.
26	Whether delegation of powers to the ICAR and the directors of the Central Research Institutes for creation of temporary posts and reappropriation of funds within the budget ceiling not help in cutting down the redtape?		

27 The pattern of expenditure in agriculture and animal husbandry sciences show that there is no comparison between budget allotment and expenditure. What are the gaps under (i) administration and (ii) equipment and (iii) buildings, etc. How can they be improved?		
GENERAL	1. A favourable environment should be created for the industries to take a more direct interest in promoting agricultural research and towards this end to earmark higher amounts of their net earnings to agricultural research projects. The public sector industrial projects should give a lead in this direction. (Rec. 117).	The recommendationwas acccepted.
	2. Vice-Chancellors of Agricultural Universities should be eminent men who have distinguished themselves in the field of agriculture or who have made outstanding contributions to the promotion of agricultural development. (Rec. 109).	Apart from eminent men who have distinguished themselves in the field of agriculture. it was considered that eminent educationists should also be considered for appointment as Vice-Chancellors.

THE RESEARCH ORGANISATION AND PROGRAMMES IN U. S. A.

(*Please* see *chart on page* 19)

The Agricultural Research Service in U.S.A. was established to consolidate most of the physical, biological, chemical and engineering research of the agricultural departments within a single organisation. This service conducts research relating to the production, utilisation and marketing of agricultural products. It also conducts regulatory programmes that involve enforcement of plant and animal quarantines, pesticides, regulation, and control of disease and pests of animals and plants. Both the research and the regulatory activities are carried on at numerous locations in all the States. Many of the research and regulatory programmes are in cooperation with the States and public and private agencies.

Special poineering laboratories conduct basic research to advance the present limit of knowledge in specific areas of the agricultural sciences. Other basic research is conducted as an integral part of the regular programme of each research division in service.

Aid in selecting the most urgent agricultural problems requiring research, in coordinating the work, and in avoiding duplication of effort comes from representatives of the major segments of U.S. agriculture and the consuming public—the groups that use the findings of research.

Agricultural research in U.S.A. has at the top a Secretaty corresponding to a Minister in our set-up with an Under Secretary who may be equivalent to a Minister of State or Deputy Minister. Below the Government level, there is Science and Education Director. This level may be said to be equivalent to our secretariat level.

RESEARCH PROGRAMME DEVELOPMENT AND EVALUATION STAFF

The Research Programme Development and Evaluation staff assist the Director of Science and Education in planning, coordination and evaluating the research activities of the Department. In cooperation with agency leaders, the staff conducts studies or analysis leading to the formulation of research in the broad areas of human nutrition and consumer use, resources conservation, resources protection, improved quality and efficiency, utilization and marketing. The staff provides leadership of interagency groups in joint efforts to analyse and evaluate special problems and develop interagency programmes which will assure optimum utilisation of departmental scientific manpower and facilities.

The Agricultural Resarch Service Administrator is responsible for direct supervision of the research and regulatory activities of the Service. These activities are organised into five main areas of work :

(a) *Nutrition, Consumer, and Industrial-use.*

Research.—Nutrition and consumer-use research is concerned with developing new knowledge about human nutrition ; nutritive values of foods ; effective consumers use of food, clothing and textiles, etc. Industrial use research is directed to finding new and expanded uses for agricultural products.

(b) *Marketing Research.*—Marketing research is directed to increasing the efficiency and revising cost of marketing agricultural commodities by means of improved marketing practices, methods, facilitiesand equipment during assembling, handling ,packing, packaging, transporting, storing, processing, wholesaling and retailing ; developing methods and instruments for identifying and measuring production quality objectively.

(c) *Farm Research.*—Farm research is conducted to improve methods of soil and water management ; to improve field and horticultural crops and the control of crop diseases, nematodes and weeds ; to develop superior strains of beef and dairy cattle, swine, sheep, goats, and poultry and to improve dairy husbandry ; to control livestock diseases and pests ; to study the biology and habits of insects and to develop biological and chemical methods for controlling insects harmful to man, animals and crops ; and to develop safe and efficient use of farm power, machines, structures and materials.

(d) *Foreign Research.*—The Foreign Research and Technical programme Division administers the foreign research contract and grant programme for the Department of Agriculture under Public Law 480 and related legislation.

(e) *Regulatory and Control Programmes.*—The Agricultural Research Service regulatory programme Division administer various laws and regulations and conduct cooperative activities in animal inspection and quarantine, plant quarantine, animal disease eradication, plant pest control and pesticides regulation.

Co-operative State Research Service

The Co-operative State Research Service administers Federal-grant funds for research in agriculture, agricultural marketing and rural life made available to State Agricultural Experiment Stations in the 50 States.

Federal Extension Service

The Federal Extension Service is part of the Cooperative extension service partnership. Three levels of government—Federal, State, and country share in financing, planning and carrying out extension education programmes.

NATIONAL AGRICULTURAL LIBRARY

The National Agricultural Library provides services to agricultural colleges and universities, research institutions, Government Agencies, agricultural associations, industry, individual scientist, farmers and the general public. It also provides coordination of Department activities in scientific and technical information documentation.

It is the largest agricultural library in the United States covering the field of agriculture in the broadest sense—botany, zoology, chemistry, veterinary medicine, forestry, plant pathology, livestock, poultry, entomology and general agriculture. Publications are received regularly from more than 150 governments and jurisdictional entities printed in almost 50 languages. It operates a clearing house for agricultural bibliographies, translations and documentation projects.

An organisational chart of the Department of Agriculture in U.S.A. is attached. This broadly corresponds to the agricultural administrative set-up at our Central level as recommended by the Seminar.

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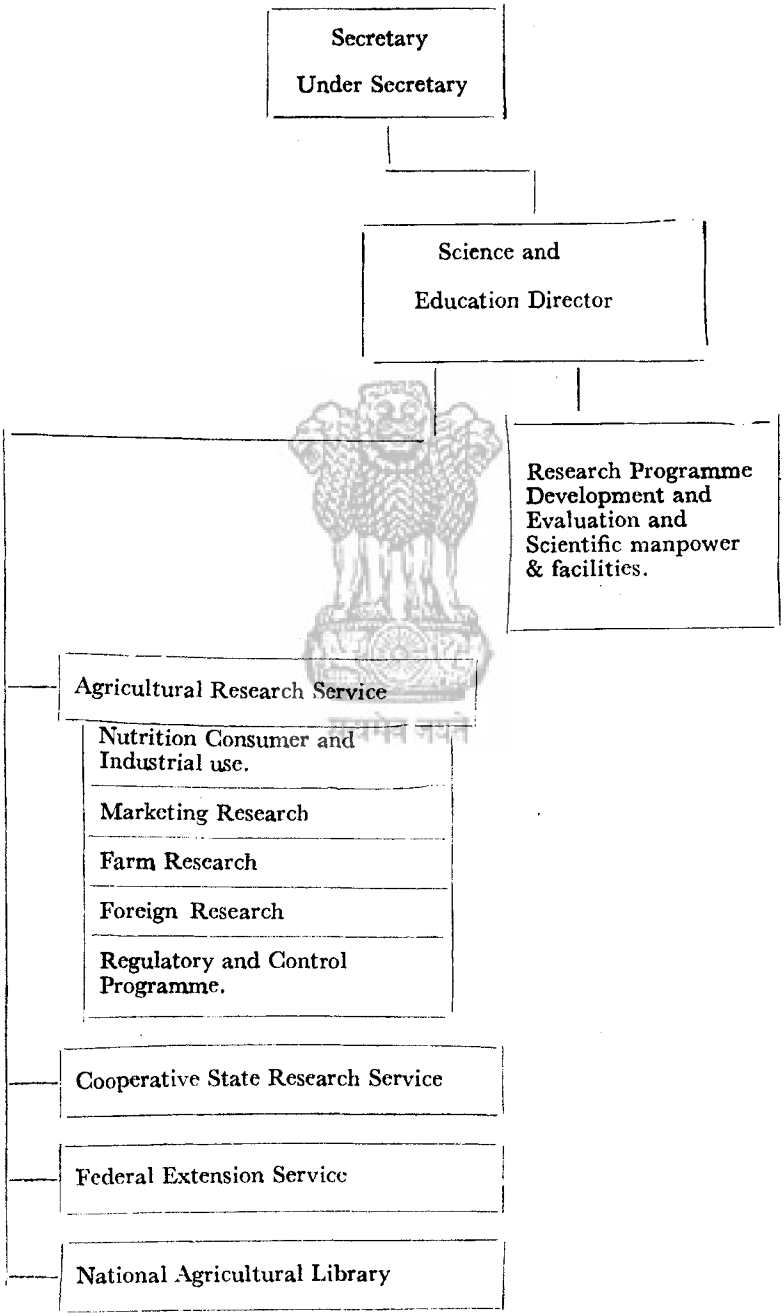
DEPARTMENT OF AGRICULTURE (U.S.A.)

(Research aspect only)


Secretary
Under Secretary
Science and Education Director
Research Programme Development and Evaluation and Scientific manpower & facilities.
Agricultural Research Service
Nutrition Consumer and Industrial use.
Marketing Research
Farm Research
Foreign Research
Regulatory and Control Programme.
Cooperative State Research Service
Federal Extension Service
National Agricultural Library

RESEARCH ORGANISATION IN CANADA

(*Please see Chart on pp.* 21)

The Research Branch is the principal research agency of the Department. Formed in 1959 by amalgamation of the Experimental Farms Service, it is responsible for a broad programme of basic and applied research on agricultural problems. It is comprised of Executive and Administrative Headquarters at Ottawa, eight Research Institutes, 14 research Stations, 27 experimental farms, one research laboratory and 19 sub-stations spread from coast to coast and north into the Tokon and Northwest territories. In Canada's main agricultural areas, it works in coordination with other federal agencies such as the National Research Council and with univesities and provincial governments.

There is a separate Minister incharge of research in the Department of Agriculture. He is also given the assistance of a Deputy Minister, Associate Deputy Minister and Assistant Deputy Minister.

The Director-General and Associate Director General are the chief executive officers. The Director-General is chairman of the Research Branch Executive which includes the Associate Director-General, four Assistant Directors-General and the Director of Administration.

The Assistant Directors-General deal respectively with institutes, establishments in Eastern Canada, establishments in Western Canada and Research coordination and services. A group of twelve research coordinators, who are specialists in various scientific disciplines, assist both the Executive and research establishments in maintaining liaison, communication and a coordinated programme of research in their respective areas.

The Director of Administration is responsible for the architectural and engineering personnel property and finance Ottawa Services and Scientific Information Sections.

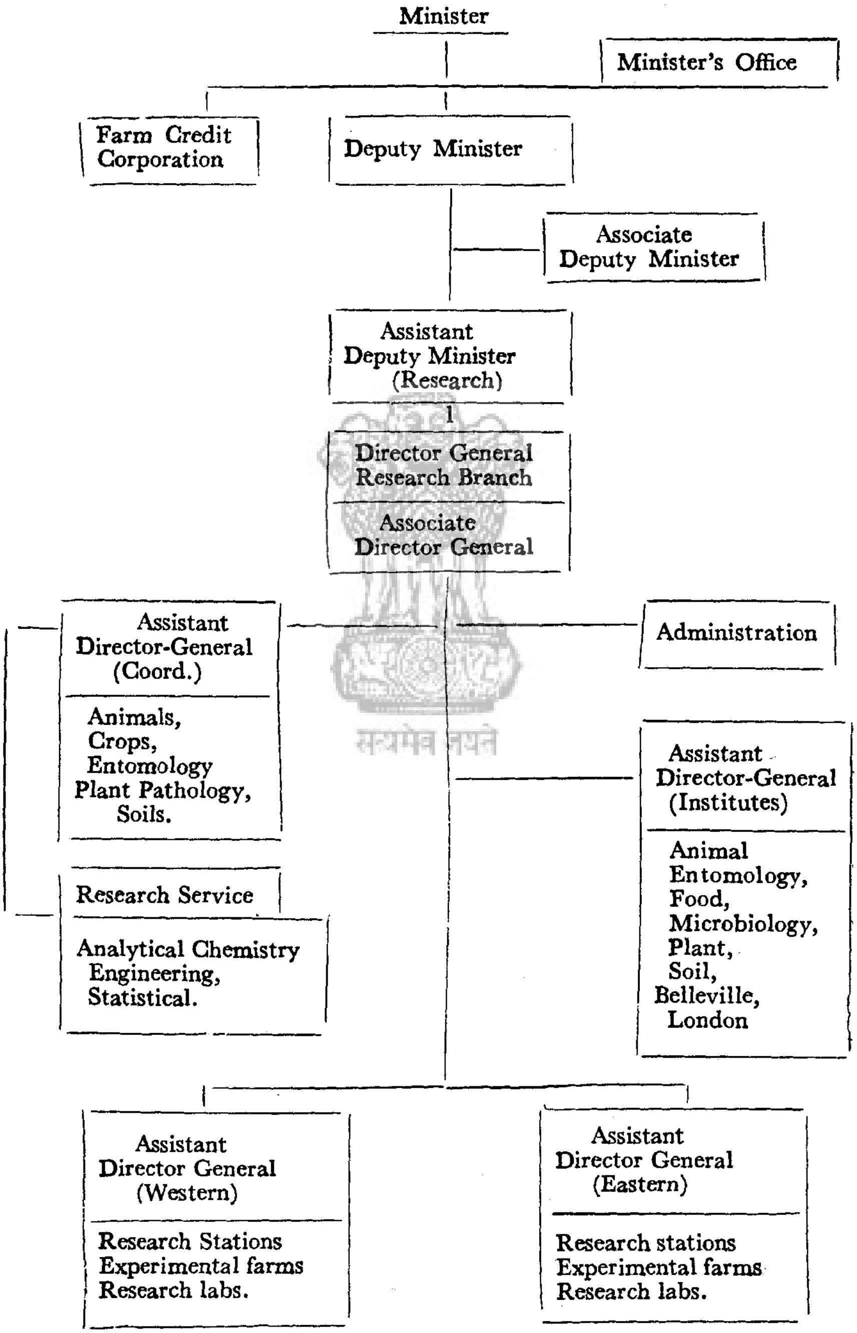
Three Research Services, located in Ottawa, provides the Branch with specialised leadership and new equipment and technique development in the fields of statistics, engineering, and analytical chemistry.

Research Institutes are primarily engaged on research of wide application to agricultural problems. In addition, they form related national services, such as identifying plants, insects and pathogens. Of the eight Institutes, six are at Ottawa, one at London, and one at Belleville.

An organisational chart is attached.

(Existing set-up)

CANADA DEPARTMENT OF AGRICULTURE (RESEARCH ONLY)


Minister
Minister's Office
Farm Credit Corporation
Deputy Minister
Associate Deputy Minister
Assistant Deputy Minister (Research)
Director General Research Branch
Associate Director General
Assistant Director-General (Coord.)
Animals, Crops, Entomology Plant Pathology, Soils.
Research Service
Analytical Chemistry Engineering, Statistical.
Administration
Assistant Director-General (Institutes)
Animal Entomology, Food, Microbiology, Plant, Soil, Belleville, London
Assistant Director General (Western)
Research Stations Experimental farms Research labs.
Assistant Director General (Eastern)
Research stations Experimental farms Research labs.

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INDIAN COUNCIL OF AGRICULTURAL RESEARCH

(*Please* see *Chart on pp.* 31)

The administration and coordination of agriculture and governmental policy relating to it were looked after by the Government of India till about 1919. As a result of the Montague-Chelmsford Reforms, agriculture became a 'transferred' subject under the administration of the then Provincial Governments. The Government of India, therefore, divested itself, except for very limited objectives, of all power of directions and control of agricultural and veterinary subjects, including research, teaching and policy making. As a result, there was no agency with the specific purpose of coordinating work in agriculture and animal husbandry in different Provinces and bringing them in line with the policy of the Central Government.

2. The Royal Commission of Agriculture (1928), which was appointed to explore the conditions relating to agriculture and rural economy in this country, realised that there should be a central agency to maintain an effective liaison between agricultural research activities in the Provinces and at the Centre. Among others, the Commission recommended the setting up of a Central Council of Agricultural Research with the primary function of promoting, guiding and coordinating agricultural and veterinary research throughout the country. Consequently, the Indian (then Imperial) Council of Agricultural Research was set up in 1929 as a Society under the Registration of Societies Act, 1860. The objectives laid down for the Council were to undertake, aid, promote and coordinate agricultural and animal husbandry education research and its application in practice, and to act as a clearing house of information in these matters.

3. At the time of setting up the Council, it was decided that for administrative reasons the Secretariat may be provided by the Government of India. An initial lump sum grant from the Central Revenues to be supplemented by a fixed minimum grant annually, was sanctioned to enable the Council to carry out its research programmes. It was, however, soon felt that the financial position of the Council needed to be put on more stable footing. Accordingly, the Agricultural Produce Case Act was enacted in 1940, which provided for the levy of cess by way of customs duty on the export of certain commodities and articles. The proceeds of the cess were to go to the Council's funds. Subsequently, as the activities of the Council expanded, additional grants-in-aid have been provided by the Government of India to the Council to enable it to finance research schemes and projects included in the national Five Year Plans.

4. Till very recently, the Council interested intself mainly in schemes of regional or all India importance ; schemes of purely local aspects being the direct responsibility of the State Governments. It used to finance wholly or partially, approved research work in Government Institutes, in Universities and in private recognised institutions.

5. Although the Council was primarily intended to be the main central agency for promoting, guiding and coordinating agricultural and animal husbandry research in the country, yet all the Central Research Institutes were, till very recently, administered directly by the Ministry of Food & Agriculture as its subordinate offices. Further, the various erstwhile Central Commodity Committees, which were constituted by the Government of India to look after research on and development of commercial crops like cotton, jute, sugarcane, oilseeds, coconut, lac, tobacco, arecanut and cashewnut and spices, were functioning like the Indian Council of Agricultural Research, as autonomous organisations under the administrative control of the Ministry of Food & Agriculture. These Committees have established their own research institutions independent of the Indian Council of Agricultural Research, the State Governments and the Central Research Institutes. The Indian Council of Agricultural Research had control only over the research schemes financed by it and the two research institutes established by the Council during the Third Plan period under its own administrative control. As a result there was no effective mechanism or a single agency responsible for coordinating and directing the research efforts as between the Central and State Research Institutions, the Indian Council of Agricultural Research and the Commodity Research Institutes.

6. Recent advances in scientific field require the coordinating and pooling of all available scientific talent, equipment and other resources so as to ensure their most economic and optimum utilisation. A research worker cannot afford to work in isolation any longer and the days are gone as far as applied research is concerned, when a lone researcher could hope to achieve very significant results; team work, therefore, important as never before. In India, we are faced not only with critical shortage of fairly competent scientists but have also been importing most of the costly modern equipment required for conducting research. Our national interest, therefore demands that we should make the best possible use of our limited scientific talent, and other resources by concentrating them at a few selected places rather than dispersing them at countless places with multiplicity of channels of control resulting in their dilution and wastage.

7. Realising the deficiencies and drawbacks of the research set-up and keeping in view the recommendations made by Export Team set up in the recent past, the Government of India decided in March 1965 to reorganise and strengthen the Indian Council of Agricultural Research, which is the pioneer research organisation in agriculture to enable it to develop and administer a national programme of agriculture research, commensurate with the country's needs. Accordingly the following steps have been taken to reorganise the Council during the last two years :—

(i) The Rules and Bye-laws of the Indian Council of Agricultural Research have been suitably revised so as to make the Council a really functional, technical competent and fully autonomous research organisation;

(ii) The Governing Body of the Council has been reconstituted making it thereby pre-eminently a body of scientists and those with interest or knowledge in agriculture;

(iii) An eminent scientist has been appointed as the Director General and Vice-President of the Council thereby replacing the tradition that such a post is to be occupied only by an administrator;

(iv) The administrative control of the following nine research institutes, which were previously controlled directly by the Department of Agriculture, has been transferred to the reorganised Council with effect from 1st April, 1966.

(a) Indian Agricultural Research Institute, New Delhi.

(b) Indian Veterinary Research Institute, Izatnagar.

(c) National Dairy Research Institute, Karnal.

(d) Central Potato Research Institute, Simla.

(e) Central Rice Research Institute, Cuttack.

(f) Central Arid Zone Research Institute, Jodhpur.

(g) Indian Grassland and Fodder Research Institute, Jhansi.

(h) Central Tuber Crops Research Institute, Trivandrum.

(i) Central Sheep & Wool Research Institute, Malpura (Rajasthan).

(v) The Central Commodity Committees have been dissolved and their research functions (including the administrative control of the commodity research institutes—named below) has been assumed by the Indian Council of Agricultural Research, with effect from 1st April, 1966;

(a) Technological Research Laboratory (Cotton), Matunga, Bombay.

(b) Jute Agricultural Research Institute, Nilaganj, Barrackpore.

(c) Technological Research Laboratory (Jute), Calcutta.

(d) Central Tobacco Research Institute, Rajahmundry.

(e) Central Coconut Research Station, Kayamgulam.

(f) Central Coconut Research Station, Kasoragod.

(g) Central Arecanut Research Station, Vittal.

(h) Indian Lac Research Institute, Namkum (Ranchi).

(vi) Such of the PIRRCOM* Centres which could not be amalgamated with the State research institutions have now been placed under the control of the Indian Agricultural Research Institute, New Delhi.

(vii) Administrative control of the following Institutes/Centres has been assumed by the Indian Council of Agricultural Research with effect from 1st October, 1967.

(a) Central Inland Fisheries Research Institute, Barrackpore (West Bengal).

(b) Central Marine Fisheries Research Institute, P.O., Mandapam Camp., Distt. Ramanathapuram (Madras).

(c) Central Institute of Fisheries Technology, Ernakulam-1 (Kerala State).

(d) Soil Conservation, Research, Demonstration & Training Centre, P.O. Ibrahimpatnam, Distt. Hyderabad.

(e) Soil Conservation, Research, Demonstration & Training Centre, Agra, U.P.

(f) Soil Conservation, Research, Demonstration & Training Centre, Vasad (Western Railway) (Gujarat).

(g) Soil Conservation, Research, Demonstration & Training Centre, Dehra Dun (U.P.)

(h) Soil Conservation, Research, Demonstration & Training Centre, Kotah, (Rajasthan).

(i) Soil Conservation, Research, Demonstration & Training Centre, Chandigarh.

(j) Soil Conservation, Research Demonstration & Training Centre, Bellary (Mysore).

(k) Soil Conservation, Research, Demonstration & Training Centre, Ootacamund, (Madras).

(viii) An Institute of Horticulture Research has also been recently started at Hassarghatta (Mysore) under the Draft Fourth Plan.

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*Project for intensive research on rice, cotton oilseeds and millets.

(ix) New recruitment rules have been framed and recuritment is now being made against all scientific and technical posts under the Council on the recommendations of the selection committees, constituted by the Council composed of eminent scientists in the respective disciplines;

(x) The pension scheme has been introduced in the Council with effect from 16th November, 1965.

(xi) Action has been initiated for declaring the three leading research institutes, *viz.*, Indian Agricultural Research Institute, New Delhi, National Diary Research Institute, Karnal and Indian Veterniary Research Institute, Izatnagar as institutions of national importance and to give them special status and authority under the Council through an Act of Parliament ;

(xii) Pending the enactment of the above legislation, enhanced powers (both administrative and financial) have been delegated to the Directors of the above three institutes as well as the Directors of the remaining institutes ;

(xiii) To assist the Director General on the technical side, four posts of Deputy Directors General have been created in the pay scale of Rs. 2,000—100—2,500 one each for (a) Crop Sciences (b) Soils, Agronomy, Irrigation and Agricultural Engineering, (c) Animal Science and (d) Agricultural Education and and Centre-State Relations. The pay scales of the Directors of the three national institutes (designate) have also been revised to be at par with the pay-scales of the Deputy Directors General.

(xiv) The administrative control of the Sugarcane Breeding Institute, Coimbatore and Indian Institute of Sugarcane Research, Lucknow, which are at present being administered as Government institutes, is likely to be transferred to the Council shortly.

(xv) Steps are also being taken to raise the economic and social status of the agricultural scientists.

8. The Cabinet Minister of the Government of India, for the time being in-charge of Agriculture, is the President of the Council. The Director General, who is also *ex*-officio Additional Secretary to the Government of India is the Vice-President and the Principal Executive Officer of the Society. The Director General is assisted on the administrative side by a Secretary, two Additional Secretaries, a Budget & Accounts Officer, and Under Secretaries ; and on the technical side by the four Deputy Directors General; Statistical Adviser and Deputy

Agricultural/Animal Husbandry Commissioners and other technical staff. A Joint Secretary in the Ministry of Finance is the *ex*-officio Fianncial Adviser of the Council.

9. In developing the programmes of research and education and scrutinising and approving the schemes, the Council functions through a Governing Body, a Standing Finance Committee, an Advisory Board, four Standing Committees, one each for (a) Agricultural Research, (b) Animal Sciences Research (c) Agricultural Education and (d) Agricultural, Economic, Statistical & Marketing Research ; and a number of Scientific Panels. The Council also coordinates and administers research, educational and extension programmes of the research institutes under it. Whereas the three National Research Institutes (designate) are under the direct control of the Director General, the Deputy Directors General are responsible for the technical and administrative coordination of the work of the remaining institutes under the overall guidance of the Director General.

10. The activities of the Council covers all aspects of agricultural and animal husbandry research and education. In the past, *ad hoc* and short term schemes were financed by the Council at the Central Research Institutes, in the Research sections of the State Departments of Agriculture and in a few privately and owned institutions. It has been the general experience that small dis-joined schemes are ineffective and sterile and hence the need for a national effort. These schemes, besides making the problem of coordination more difficult, were also not conductive to research work being planned on a long-term basis. In order to remedy the above difficulties, the Council has decided to sponsor, supervise and coordinate research work in crops improvement, as also in other fields, on an all-India basis, which constitutes a landmark in the progress of agricultural research in the country. Under these Coordinated Projects, the country will be divided into different zones and regions. Two important aspects of these schemes are : (i) active cooperation between the scientists at the Centre, the States and Agricultural Universities and (ii) Joint review of the work done by the Centre State and Agricultural University scientists actually working on the projects, who would meet annually in a Workshop and discuss and evaluate the work done during the year and prepare plans for the next year. A continual coordination and supervision of these projects will be done by the All India Project Coordinator and Senior Technical Officers of the Council. The actual administrative control will, however, vest with the State Government/Agricultural University. By and large, the Coordinated Projects aim at utilising the existing facilities and strengthening them wherever considered necessary, at the existing centres of research. Whereas the Council will meet the entire expenditure on the additional staff and the scientific equipment and other materials, the State Governments/Agricultural Universities will provide the necessary land and laboratory buildings for the projects. A memorandum of Understanding has been drawn up with a view to laying down

the guidelines and indicating the respective responsibilities of the various participating agencies in operating the projects. Some of the Research Projects have already been started; others are at various stages of finalisation. The All India Coordinated Research Projects are in the field of crop and soil sciences, agronomy, agricultural engineering and in the various branches of animal sciences. Those in the field of crop sciences aim at the improvement of major crops or groups of crops, such as rice, wheat, maize, jowar, bajra, pulses, potato and other root and tuber crops, vegetables, fruits, oilseeds, soyabean, cotton, jute and several others. The projects in soil science and agronomy aim at strengthening the new strategy for intensive agricultural production through systematic research in soil structure and soil chemistry in relation to soil fertility problems in fertilizer use, micronutrients soil testing and water management for maximum crop production and in techniques of multiple cropping with a view to harvesting the best possible yields per unit area of land per year. In agricultural engineering, basic and adaptive research on agricultural implements and machinery are being taken up. In animals sciences, coordinated projects have been formulated in the fields of animal production, animal breeding, animal diseases and animal nutrition and will cover researches on milch cattle, poultry, piggery, sheep and goats and other important economic species of animals.

Gratifying results have emerged out of the crop improvement projects, which were initiated on a very modest scale during the past few years A number of high yielding, fertilizer responsive varieties which were evolved under these projects have been released for general cultivation. Mention can be made of the following releases :

Wheat.—Lerma Rajo, Sonara 64, Sharbati Sonara, Kalyansona Sonalika, Safed Lorma, S. 331.

Rice.—Taichung Native 1, Taichung 65, Tainan 3, IR-8, ADT. 27

Jowar.—CSH. 1 and CSH. 2

Bajra.—H.B. 1 and H.B. 2

Maize.—Hybrids Himalay 123, Ganga 101, Ganga 3, Ganga 1, Ganga Safed 2, Daccan, Ranjit and Histarch and 'Composites' Ambar Jawahar, Sona, Vijaya, Vikram and Kissan.

Potato.—Kufri, Sindhuri, Kufri Chandermukhi.

Research on soil fertility and fertilizer use have shown the higher responses per unit nutrient in the case of newly-developed varieties. Optimum doses of fertilizers required for production have been worked out. It has been also found that for dwarf wheat best time of first irrigation is at the stage of crown root formation. The researches on micronutrients have shown wide spread deficiency of zink in many soils.

As regards animal sciences, new vaccines have been developed for protection against livestock diseases. Cross-breed cattle and sheep with higher level of production have been developed. Valuable results have also been achieved in the field of animal nutrition and diary technology.

11. There is great need for strengthening higher education in agriculture and giving it due attention and emphasis in order to meet the increasing requirements of trained personnel for various production, research and educational programmes. More than expansion, the emphasis is on enhanced quality of education, so that problem-oriented research may enrich educational programmes and lead to increased production in the shortest possible time. Integration of teaching, research and extension is absolutely essential to make agricultural education purposeful. With a view to bring out this integration, nine Agricultural Universities have already been setup in the States of Punjab, Rajasthan, West Bengal, Orissa, Mysore, Andhra Pradesh, Madhya Pradesh, Maharashtra and Uttar Pradesh. The Education Commission (1964-66) has recommended that at least one Agricultural University to be established in each State. It is hoped that the remaining States will be able to have Agricultural Universities during the Fourth Plan period. A model Agricultural University Act has recently been drawn up by the Indian Council of Agriculturial Research and has been circulated to the State Governments/Agricultural Universities to enable them to remove anamolies, if any, in their existing enactments.

12. The Council has decided to extend during the Fourth Plan period, financial assistance to the Agricultural Universities, to enable them to improve the pay scales of the teaching staff and bring them on par with the University Grant Commission scales. Like the University Grants Commission, the Indian Council of Agricultural Research will give 80% of the additional resources required for introduction of University Grants Commission's scales of pay for an initial period of 5 years ; the State Government meeting the balance of 20% during this period and thereafter taking over the full commitments.

13. The standard of many agricultural colleges is extremely poor. The Indian Council of Agricultural research has, therefore, suggested to the State Governments to adopt a selective approach in this matter ; to pick up colleges, which are capable of improvement and to strengthen them and bring them to the required standard, with financial assistance from the Council.

14. The Council is also awarding a large number of fellowships and scholarships for post-graduate and under-graduate training in agriculture and other related sciences.

15. To disseminate the vast information accumulating as a result of the research work being done/sponsored by the Council, the Council brings out a large number of publications of English, Hindi and the

regional languages. These include technical journals, books, and monographs useful to research workers and scientists and popular magazines, pamphlets and leaflets, written for the benefit of students, teachers and progressive farmers. Besides publications, full use is made of the audio-visual aids, such as films, to ensure that the research results do not pile up in the files but are carried to the proper quarters where they can be really useful.

16. As a result of the reorganisation of the Council and the intensification of its research and educational activities, the Council's annual budget has increased from Rs. 1·55 crores in 1965-66 to Rs. 8·90 crores in 1966-67 and Rs. 18·48 crores in 1967-68. The amount being invested is well-justified and is yielding good dividends.

The high yielding improved varieties of cereal as well as commercial crops evolved or adapted at the Research Institutes maintained by the Council, or under the schemes financially supported by its, have already caught the imagination of our farmers and hold promise to usher in an era of plenty and self-sufficiency in the very near future.

17. Emerging out of the discussions in the Seminar the revised organisational chart of the I.C.A.R. may be referred to at p.] 35.

18. For the organisational chart of the I.C.A.R., as existing at present may please be referred to at p. 31.

सत्यमेव जयते

RESEARCH INSTITUTES UNDER THE INDIAN COUNCIL OF AGRICULTURAL RESEARCH

NATIONAL INSTITUTES

1. Indian Agricultural Research Institute, New Delhi.
2. National Dairy Research Institute, Karnal.
3. Indian Veterinary Research Institute, Izatnagar.

OTHER INSTITUTES

1. Central Potato Research Institute, Simla.
2. Central Rice Research Institute, Cuttack.
3. Central Arid Zone Research Institute, Jodhpur.
4. Central Tuber Crop Research Institute, Trivandrum.
5. Indian Grass Land & Fodder Research Institute, Jhansi.
6. Central Sheep & Wool Research Institute, Malpura.
7. Indian Lac Research Institute, Namkum.
8. Central Arecanut Research Stn., Vittal.
9. Technological Research Lab. Cotton, Bombay (Matunga).
10. Technological Research Lab. (Jute) Tollyganj, Calcutta.
11. Jute Agricultural Research Institute, Nilgunge.
12. Central Tobacco Research Institute, Rajamundry.
13. Central Coconut Research Stn., Kayangulam.
14. Central Coconut Research Stn., Kasaragaod.
15. Sugarcane Breeding Institute, Coimbatore.
16. Indian Institute of Sugarcane Research, Lucknow.
17. Central Inland Fisheries Research Institute, Barrackpore.
18. Central Marine Research Institute, Mandapam Camp, Madras.
19. Central Institute of Fisheries Technology, Ernakulam.

सत्यमेव जयते

RESEARCH INSTITUTES UNDER THE INDIAN COUNCIL OF AGRICULTURAL RESEARCH

NATIONAL INSTITUTES

1. Indian Agricultural Research Institute, New Delhi.
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1. Central Potato Research Institute, Simla.
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4. Central Tuber Crop Research Institute, Trivandrum.
5. Indian Grass Land & Fodder Research Institute, Jhansi.
6. Central Sheep & Wool Research Institute, Malpura.
7. Indian Lac Research Institute, Namkum.
8. Central Arecanut Research Station, Vittal.
9. Technological Research Lab. Cotton, Bombay (Matunga).
10. Technological Research Lab. Jute (Tollyganj) Calcutta.
11. Jute Agricultural Research Institute, Nilgunge.
12. Central Tobacco Research Institute, Rajamundry.
13. Central Coconut Research Station, Kayamgulam.
14. Central Coconut Research Station, Kasaragod.
15. Sugarcane Breeding Institute, Coimbatore.
16. Indian Institute of Sugarcane Research, Lucknow.
17. Central Inland Fisheries Research Institute, Barrackpore.
18. Central Marine Research Institute, Mandapam Camp, Madras.
19. Central Institute of Fisheries Technology, Ernakulam.
20. Central Food & Technological Research Institute, Mysore.
21. Central Sugar Research Institute, Kanpur.
22. Central Leather Research Institute, Madras.
23. Central Sericulture Research Institute.

INDIAN AGRICULTURAL RESEARCH INSTITUTE NEW DELHI (Chart on pp. 42-43).

The Indian Agricultural Research Institute, popularly known as Pusa Institute or IARI is the premier institution of India in the field of Research and post-graduate instruction in agricultural subjects. It is under the Indian Council of Agricultural Research and was originally founded in 1905 at Pusa, a village in North Bihar. Consequent on the earthquake in 1934 in that area, it was transferred in 1936 to its present site in New Delhi.

The primary functions of the institute include :

(1) Fundamental and applied research in agricultural sciences, and related disciplines.

(2) Post-Graduate instruction to the M.Sc. and Ph.D. degree s The institute has the status of a university.

(3) Advisory as also extension work in a block of villages in Delhi State.

It conducts fundamental and applied research in almost all the major disciplines of agricultural sciences. Besides its own research and development programmes, the Institute undertakes research projects in cooperation with the Agicultural organisations, institutes and State Departments of Agriculture etc., as also with foreign agencies like the Rockfeller Foundation, Indo-US Technical Cooperation Mission, USAID, U.S. Department of Agriculture, the Food and Agricultural Orsanisation of the United Nations, the Ford Foundation and the International Atomic Energy Agency. In recognition of its extensive teaching and research activities, the Institute was accorded the status of a University in 1958 under U.G.C. Act. The post-graduate school of IARI gives training leading to the award of M.Sc. and Ph.D. degrees.

The Institute has excellent research and teaching facilities with upto-date laboratory equipment which are the best of their kind in the country. This attracts students not only from all over India but also from several countries in Asia, Africa, Europe and America. The unique feature of this Institute is the location within a single campus a coordinated research activity in almost all the disciplines related to scientific agriculture and a complete integration of research programmes with post-graduate training. The post-graduate teaching is modelled on the "credit courses" system prevailing in the Universities of USA. At the post-graduate school, however, hundred courses are offered in all major disciplines of agriculture. Until this year 375 students have been awarded Ph.D. degree and 567 students the M.Sc.

In the field of post-graduate training in agricultural sciences and cognate disciplines, the facilities offered by the institute include well-qualified technical staff and an excellent library and modern laboratory equipment. A unique feature of the system of instruction at the

Institute is that research teaching and extension are fully :integrated and also that the programme of instruction is broad-based so as to give the students a mastery not only in his major field of specialisation but also in supporting minor fields.

The Institute comprises 17 Divisions :

Agronomy, agricultural extension, agricultural economics, agricultural engineering, Genetics, Horticulture, Plant Protection, Entomology, Mycology and Plant Pathology, Micro-biology, soil sciences and agricultural chemistry, agricultural physics, All-India Soil Land use Survey, Nemotology, agricultural chemicals, plant bio-chemistry, plant physiology and phytotronics. In addition to the 17 Divisions, the Institute has a number of regional and sub-stations in different parts of the country for research on wheat, cotton, oil seeds and vegetable crops for seed production and for work on plant introduction and virus. These are as follows:

(1) Agricultural Research Sub-Station, Karnal.
(2) Botanical Sub-Station, Pusa (Bihar).
(3) Wheat Breeding, Sub-Station, Simla.
(4) Wheat Breeding Sub-Station, Wellington.
(5) Wheat Breeding Sub-Station, Indore.
(6) Wheat Breeding Sub-Station, Bhowali.
(7) Regional Research Centre, Ajmer.
(8) Central Vegetable Breeding Sub-Station, Katrain.
(9) Plant Pathological Station, Simla.
(10) Plant Virus Research Station, Poona.
(11) Plant Virus Research Station, Kalimpong.
(12) Plant pathological Station, Wellington.
(13) Plant Introduction Sub-Station, Simla.
(14) Plant Introduction Sub-Station, Kanyakumari.
(15) Plant Introduction Sub-Station, Amravati.
(16) Plant Introduction Sub-Station, Jodhpur.
(17) Regional Research Centre, Coimbatore.
(18) Regional Research Centre, Hyderabad.
(19) Regional Research Centre, Kanpur.
(20) Regional Research Centre, Sirsa.

LIBRARY :

The Institute has got one of the best libraries possessing about two lakhs of books and receives about 1500 scientific journals annually. It is the biggest agricultural library in India and is equipped with necessary facilities e.g. safe storage of precious books and also for reading rooms for post-graduates studies.

OTHER FEATURES :

(i) There is a collection of over 22,000 insect specimes at the Institute collected during more than four decades from India and neighbouring countries and Europe.

(ii) The Institute has been one of the leading research centres of Plant virus in the country. Its mycological herbirium constitute a unique repository of specimens of fungi in the East. It now has 27,000 specimens representing 5,000 species.

(iii) For the development of superior varieties of crop plants through plant breeding, extensive collections of crops comprising indigenous and exotic varieties have been built up.

(iv) For cattle breeding together with scientific feeding and proper management the Institute maintains a herd of sahiwal milch cows which is considered to be one of the best and most consistently performing herds in the world.

(v) Improved varieties have been developed in a wide range of crops including white barley, oats, paddy, maize and jowar bajra, gram, arhar, peas, lentil, linseeds, safflower, sesame, tobacco, chilli, berseem grasses and cotton.

(vi) Recently introduced dwarf Mexican variety for wheat has also been improved for their protein content and grain colour. A variety named Sharbati Sonora has recently been released for general cultivation.

(vii) Improved varieties giving excellent performance and freedom from disease has also been brought under control for vegetables including tomatos, brinjals, potatoes, table cowpea, double gourd, seed potato, garden peas and bhindies.

(viii) For grain storage, a cheap structure has been developed in which a film of polythelene is incorporated within the body of the mud-walls to completely stop multiplication of storage pests within the structure.

(ix) Improved techniques of production soil management and mixed farming have been developed to maximise production at minimum costs. Studies of Indian soils and manurial products within the crop production have already helped the farmers to obtain high crop yields and better quality of crops.

(x) Several agricultural implements and machines for better performance have been fabricated.

EXTENSION

Since 1949, the Institute is operating on intensive cultivation schemes in a number of villages around Delhi. The programme includes the trials and demonstration and plots in cultivators field with a view to emphasising upon them the value and usefulness of improved varieties of crop plants and of scientific agricultural products and implements. Demonstrations are also given in methods of plant protection including control of field rats and pests and soil conservation.

FINANCE

The following figures gives the budget provision and expenditure of Indian Agricultural Research Institute during the year 1966-67 and 1967-68.

	1966-67	1967-68
	Rs.	Rs.
1. Budget Provision	1,62,25,400	2,03,20,500
2. Expenditure	1,49,28,799	1,82,85,200

GENERAL

Constitution of the Council

The Institute functions through a Council which discusses all important scientific matters and takes important decisions regarding the functioning of the Institute. It is also a a coordinating agency in that all inter-divisional matters are decided by it.

The Institute is the largest among the three institutes which have been declared as of national importance. However, it is subordinate office of the Indian Council of Agricultural Research. It has been found in practice that the research work has suffered because of delays in getting the sanction for the various schemes which require financial clearance of the Ministry. Among the measures for streamlining the work of the Institute, it has been suggested that the Director of the Institute should be delegated powers for reappropriation of funds within the overall ceiling of the budget as it was found that great fillip to the research work could be given by creation of more facilities in the nature of availability of man-power as there was general short-fall in expenditure on the personnel side. This would also help the Institute to take up the work of emergent nature.

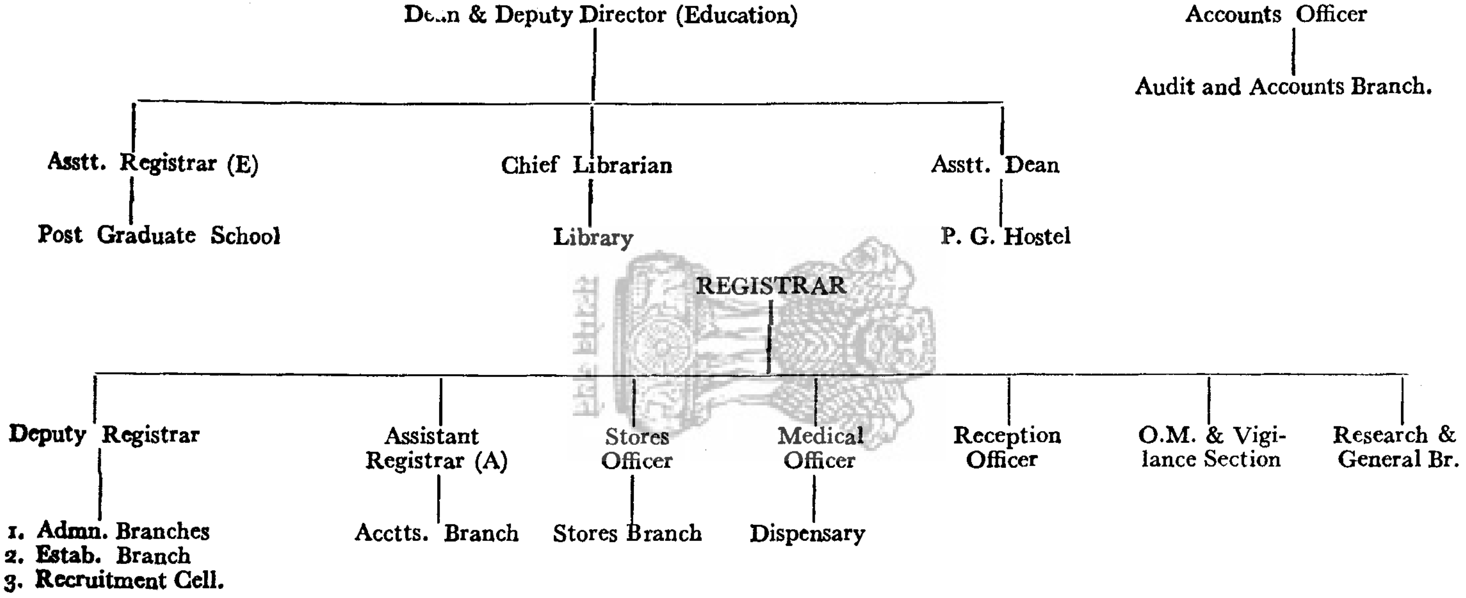
ORGANISATIONAL CHART OF THE INDIAN AGRICULTURAL RESEARCH INSTITUTE, NEW DELHI AS ON 1-4-67

(Existing set up and approved by the Seminar)

DIRECTOR

- Dean & Depury Director (Education)
- Registrar
- Accounts Officer
- Sr. Research Officer-*cum*-Editor
-
  1. Head of the Divn. of Agronomy.
  2. Head of the Divn. of Agril. Engg.
  3. Head of the Divn. of Genetics.
  4. Head of the Divn. of Pl. Physiology.
  5. Head of the Divn. of Entomology.
  6. Head of the Divn. of Nemotology.
  7. Head of the Divn. of Horticulture.
  8. Head of the Divn. of Mycology & Plant Pathology.
  9. Head of the Divn. of Soil Sc. & Agril. Chemistry.
  10. Head of the Divn. of Agril. Chemicals.
  11. Head of the Divn. of Agril. Physics.
  12. Head of the Divn. of Pl. Introduction.
  13. Head of the Divn. of Microbiology.
  14. Head of the Divn. of Agril. Economics.
  15. Head of the Divn. of Agril. Bio-Chemistry.
  16. Head of the Divn. of Agril. Extn.
  17. Regional Research Centres at Coimbatore, Hyderabad, Kanpur and Sirsa.

DEAN & DEPUTY DIRECTOR (EDUCATION)



INDIAN VETERINARY RESEARCH INSTITUTE

(Please *see* chart on page 47)

Division of Bacteriology and Virology

This division deals mainly with research problems on diseases due to bacteria and viruses. Preliminary field investigation work is also undertaken in respect of diseases due to other causes as well. Teaching of post-graduate students is also undertaken.

Division of Pathology

This division concerns itself with tackling problems related to pathology of bacterial, viral and parasitic diseases as well as those connected with nutritional imbalance. The division also undertakes field investigation of animal diseases of obscure nature on receipt of specific request. Teaching of post-graduate students is also undertaken.

Division of Biological Products

This division is directly responsible for the manufacture of biological products required in connection with animals disease control work. At present, as many as 38 products of different kinds are supplied from here to meet the demands of the various states as well as of certain foreign countries. The Division is so organised that it can undertake production of new vaccines at a short notice, if demand is placed upon it. The Division imparts training to veterinary graduates in the technique of manufacture of biological products.

सत्यमेव जयते

Division of parasitology

The main function of this Division is to study the manifold problems of parasitic infections in animals and to devise measures for the prevention of losses due to them. In addition, the Division takes its share of routine activities of the Institute in the indentification of parasites from all over India. The work of this Division is carried on in three sections-Protozoology, Entomology and Helminthology. Teaching of post-graduate students is also undertaken.

Division of Animal Nutrition

The Division undertakes the study of nutrition in relation to the maintenance of health, normal health growth and productive capacity of animals in India. It is entrusted with the correlation of nutrition work done at provincial centres, at the central institute and closely collaborates with the Agricultural and Animal Husbandry departments on factors affecting the composition of animals food stuffs. It works in cooperation with other Divisions of the Institute on the influence of nutrition on the susceptibility to diseases and genetical performances.

The section of animal climatology is provided with a psychometric chamber which is the only one of its kind in Asia. Here fundamental and applied research on the effect of different climates is undertaken on livestock production and physiology. Teaching of post-graduate students is also undertaken.

Division of Poultry Research

The main functions of this Division are to undertake fundamental research on various aspects of Poultry breeding and development, poultry nutrition, physiology as well as marketing and processing of eggs and poultry. A well organised and extensive poultry Farm is attached to the Division which provides ample facilities for research and for imparting practical training in all aspects of poultry science to post-graduate students attending the division. Teaching of post-graduate students is also undertaken.

Division of animal genetics

The main function of this Division is to carry out fundamental and applied researches in Animal Genetics and allied sciences with a view to finding out ways and means of improving Indian Livestock by scientific methods of breedings. The Division also undertakes biological tests for diagnosing pregnancy in farm animals and analysis of samples of semen for assessing their fertilizing capacity. Teaching of post-graduate students is also undertaken.

Post-graduate College of Animal Sciences

The Institute imparts post-graduate education in the field of Veterinary Science and Animal Husbandry. Besides this, students are admitted for practical laboratory training and for conducting research work leading to post-graduate degree of several Indian and foreign Universities on the basis of a thesis. At present, the P. G. College prepares students for M. V. Sc. of Agra University in six subjects. It also admits students for research work leading to Ph. D. degree of this and of some other Universities where students may be accepted for registration in this connection.

As a rsult of complete integration of teaching research between the various research divisions and P. G. College of the Institute, the Institute now conducts the following other diploma and certificate courses:

1. National Diploma in Preventive Veterinary Medicine. Duration one academic year.
2. National Diploma in Animal Husbandry. Duration one academic year.
3. National Diploma in Poultry Husbandry. Duration one academic year.

4. Post-graduate certificate course in Artificial Insemination, Gynaecology and Physiology of Reproduction. Duration three months.
5. Post-graduate certificate course in the technique of manufacture of Biological Products. Duration six months.
6. A limited number of properly qualified candidates are admitted for two years post-graduate training leading to the award of the Associateship of I. V. R. I.
7. Arrangements are also made for admission of limited number of bonafide research workers in an honorary capacity subject to availability of accommodation and necessary facilities.

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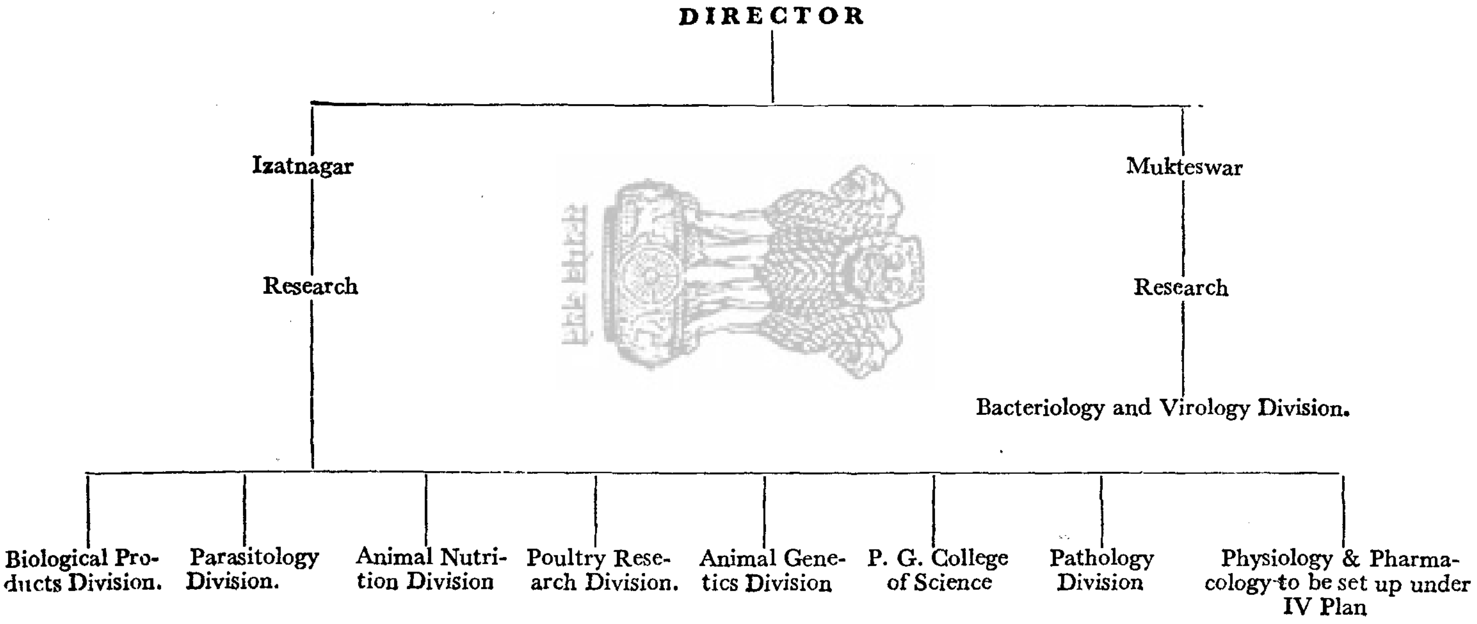
(Existing set up as approved by the Seminar)

CHART SHOWING THE ORGANISATIONAL SET UP OF THE INDIAN VETERINARY RESEARCH INSTITUTE, IZAT-NAGAR, MUKTESWAR


DIRECTOR
Izatnagar
Research
Mukteswar
Research
Bacteriology and Virology Division.
Biological Products Division.
Parasitology Division.
Animal Nutrition Division
Poultry Research Division.
Animal Genetics Division
P. G. College of Science
Pathology Division
Physiology & Pharmacology to be set up under IV Plan

NATIONAL DAIRY RESEARCH INSTITUTE

(Please see Chart on page 51)

1. *Division of dairy bacteriology.*—This division conducts research in dairy bacteriology on various fundamental and applied aspects and the standardisation of bacteriological methods of quality control. It is also concerned with the enforcement of hygienic practices in the production and handling of milk on the farm, routine bacteriological control of production and milk and milk products handled in the dairy and checking of dairy plant sanitation.

2. *Division of dairy chemistry.*—This division is concerned with research and investigation in chemistry of milk & milk products, the quality control from the standpoint of chemical composition, the study of problems associated with the chemical changes that take place during the processing of milk and milk products and the development of methods for the detection and control of adulteration of milk and milk products.

3. *Division of dairy engineering.*— This division helps other research divisions in the maintenance and satisfactory operation of the dairy plant and machinery. It has an up-to-date workshop for carrying out research in designing, fabrication and testing of dairy equipment and machinery to suit the requirements of the dairy industry.

4. *Division of dairy husbandry.*—The division is concerned with research and investigations on problems pertaining to the breeding and feeding of dairy cattle, physiological studies on the utilisation of feed in relation to milk production, health and growth of animals at different levels of protein feeding and the assessment of rumen digestion in animals using fistula method.

5. *Division of dairy technology.*—Division is concerned with research and investigation in all aspects of dairy which was inaugurated in April, 1961. The dairy is designed to handle 5000 litres of milk daily. It has modern equipment to pasteurise and bottle milk and manufacture butter, ice-cream, cheese, butter oil, ghee, milk powder and condensed milk for training and research purposes.

The Institute has a long tradition of cheese making in India, starting with the manufacture of cheddar cheese from cow milk when the institute was located at Bangalore. Today, research at the Institute offers the industry a standardised method of manufacture of cheddar cheese from buffalo milk, together with early ripening varieties like Karnal cheese and brick cheese. The procedure for the manufacture of processed cheese from buffalo milk cheese has also been standardised. Cheese has also been successfully made from microbial rennet and a cheese has been recovered from waste butter-milk which can be used in the blending process in the manufacture of processed cheese. Procedures for the manufacture of soft cottage type cheese from high acid or curdled milk have also been standardised.

6. *Division of dairy extension.*—The Division of Dairy Extension has been established with the object of linking the National Dairy Research Institute with the dairy industry and the farm community. The objective is sought to be achieved through a programme of field extension, research in extension and the dissemination of scientific knowledge through various information media. The Division has a well-equipped production unit including printing press, art, photography and exhibition facilities for developing teaching materials such as slides, flannelgraphs, posters, charts, etc. There is a film library for loaning films on dairying to members.

In cooperation with the subject matter specialists of the research divisions, the Division conducts extension work in the villages, and on request from dairy plants in the country in the areas of dairy cattle management, fodder farming, clean milk production, milk procurement and transport, milk processing, products manufacture, quality control, etc. The kit for the Hansa Milk Test was designed and fabricated and is now extensively used in public health laboratories and dairy plants.

7. *Economics and Statistics Division.*—Economics & Statistics Division conducts dairy surveys and assists research divisions in the Statistical planning of research projects and analysis of their findings. It also conducts research independently on problems having economic significance.

8. *Milk Nutrition of Milk and Milk products division.*—It conduct research in nutritive value of dairy products and their use in dietary.

9. *Division of Dairy Education & Training.*—The Division of Dairy Education & Training is concerned with the planning and organisation of the different training courses at the Institute. Attached is the Dairy Science College which is affiliated to the Punjab University.

The educational programme of the Institute is designed to provide both broad-based and specialised courses of training in dairying with a view to prepare students for various supervisory and working positions in the industry.

Name of the courses taken at the institute :

(a) Ph. D. by research.

(b) M. Sc. (Dairying)-Punjab University.

(c) B. Sc. in Dairying (Dairy husbandry)-Punjab University.

(d) B. Sc. in Dairying (Dairy Technology)-Punjab University.

(e) Diploma in Dairy Engineering.

(f) Dairy Extension Course.

(g) I. D. D. (Dairy Husbandry).

(h) I. D. D. (Dairy Technology).
(i) Short Course in Milk Production.
(j) Short Course in Milk Plant Operations.
(k) Special Short course training in dairying.
(l) Short course in dairy plant management.
(m) Short course in Quality Control.

10. *Regional Stations.*—The major functions of the regional stations which are located at Bangalore, Bombay and Kalyani are applied research on problems having practical significance in their respective regions, and the extension of research findings and proven information on different aspects of dairying. The regional station at Bangalore has the additional function of training students for the diploma courses in Dairy Husbandry and Dairy Technology, the short course in Dairying and the Honorary Research Workers course. Whilst the Bangalore station has well developed facilities for the advancement of its programme, the other two stations have been recently established, and are being gradually developed.

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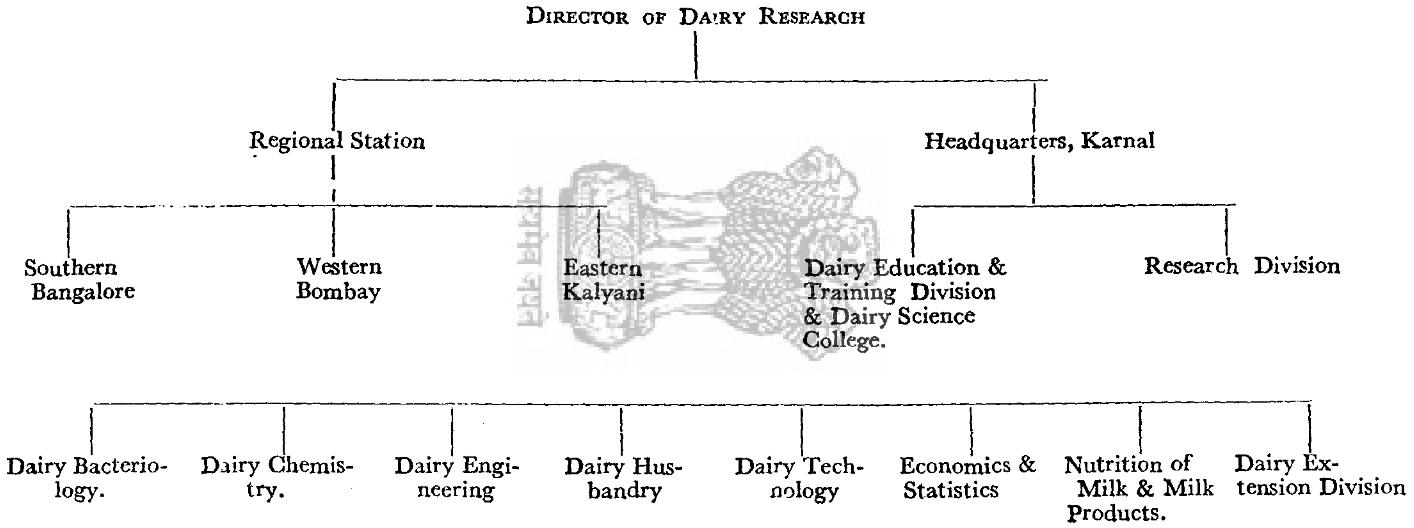
(Existing set up as approved by the Seminar)

NATIONAL DAIRY RESEARCH INSTITUTE ORGANISATION SET UP



CHAPTER II

EDUCATION & TRAINING

Transforming traditional agriculture into modern scientific system of farming calls for a continuous infusion of science and technology into our farming practice. This demands increase in the technical competence of workers in the field. Education of farmers in scientific farming provides the necessary change in their attitude not only towards farming but also towards nature; and the ways in which nature can be harnessed better for increasing production. Our agricultural educational system must provide for a smooth change in the attitude of millions of farmers towards modernisation. Combined with this are the twin objectives of training of existing workers and provision of competent extension services.

Agricultural education in the past has not had a smooth sailing. The multipurpose high schools have failed to properly equip the students desirous of returning to land; neither helped those who desired to enter the agricultural colleges. On the other hand, the deteriorated standard in agricultural education in the agricultural colleges is a matter of serious concern. This is due to mushroom growth of agricultural colleges in some States without proper facilities, equipment, staff, etc. Recently, agricultural universities have been set up in 9 of the States and provide a base for an integrated approach towards agricultural research, teaching and extension. The overall control lies with the I.C.A.R. who should be equipped and empowered for an accreditation of standards in colleges, supervision and control. One of the primary objectives of the I.C.A.R. is to undertake, aid and promote and coordinate agriculture and animal husbandry eduation and research in the country. The Council plays a very important role in the field of agricultural eduction. To facilitate this, it is felt that the council should have the same functions and powers in the field of agricultual education as are vested in the University Grants Commission which are summarised below:—

(i) inquire into the financial needs of Universities;

(ii) allocate and disburse, out of the Fund of the Commission, grants to Universities established or incorporated by or under a Central Act for the maintenance and development of such Universities or for any other general or specified purpose;

(iii) allocate and disburse, out of the land of the Commission, such grants to other Universities as it may deem necessary for the development of such Universities or for any other general or specified purpose. Provided that in making any grant to any such University, the Commission shall give due consideration to the development of the University concerned, its financial needs, the standard attained by it and the national purposes which it may serve ;

(iv) recommend to any University the measures necessary for the improvement of University education and advise the University upon the action to be taken for the purpose of implementing such recommendation ;

(v) advise the Central Government or any State Government on the allocation of any grants to Universities for any general or specified purpose out of the Consolidated Fund of India or the Consolidated Fund of the State, as the case may be.

(vi) advise any authority, if such advice is asked for, on the establishment of a new University or on proposals connected with the expansion of the activities of any University.

(vii) advise the Cental Government or any State Government or University on any question which may be referred to the Commission by the Central Government or the State Government or the University, as the case may be;

(viii) collect information on all such matters relating to University education in India and other countries as it thinks fit and make the same available to any University ;

(ix) require a University to furnish it with such information as may be needed relating to the financial position of the University or the studies in the various branches of learning undertaken in that University , together with all rules and regulations relating to the standards of teaching and examination in that University respecting each of such branches of learning; and

(x) perform such other functions as may be prescribed or as may be deemed necessary by the Commission for advancing the cause of higher education in India or as may be incidental or conducive to the discharge of the above functions.

Another approach to the problem of increasing technical competence of the extension workers is the extent to which their practical knowledge is oriented towards fresh problems. This can be done by way of facilities for both orientation and reorientation training. Many problems arise as to the best way of imparting such a training. It has been suggested, it can be done by entrusting the running of different State farms to the senior extension staff in each area. Such a step will have several advantages. Firstly, the extension staff can apply the latest scientific findings on a large scale and acquire proficiency in the use of such techniques. Secondly, a large number of extension workers can be trained to produce high yields and thereby equip themselves to educate the farmers. Thirdly, the farms can become demonstration and training centres for farmers.

Education and training thus call for a detailed review. A comparative statement showing the recommendations made by the Study Team on Agricultural Administration and the issues for discussion is attached.

AGRICULTURAL ADMINISTRATION

Comparative Statement Showing the issues raised for discussion in the Seminar and the Recommendations made by the Study Team on Agricultural Administration on the recommendations of the Seminar

EDUCATION AND TRAINING

Issue No.	Issues raised	Recommendations by the Study Team on Agricultural Administration	Recommendations of the Seminar
1	2	3	4
1	Should there be a Minister of State incharge of research, education and training in agriculture, animal sciences and forestry functioning under a Cabinet Minister?	..	As suggested under the Chapter on Research, a Minister of State should exclusively be made incharge of Research Education, and Training in agriculture, animal sciences and forestry.
2	Should the Forest colleges now under the M/O Food, Agriculture, Community Development and Cooperation be transferred to I. C. A. R. and given the status of a university ?	..	It was felt that education and training aspects of forestry should be transferred to the ICAR and the Department of Agriculture should look after the developmental and commercial exploitation of the forests. The Forest college should be given the status of a University.
3	Accreditation Review Committee should be appointed for each Institute.	All the existing agricultural colleges, whether they may be in the private management or Government control should be subjected to critical review by an accreditation team to be set up by the ICAR. Government grants should be canalised to the institutions only on the basis of the reports of this team and the entrance to	The recommendation of the Study Team was accepted.

		the Government jobs should be conditional on education in recognised institutions only (Rec. 125).	
4	The popular opinion is that the standard of graduates, post graduates turned out of the Agricultural Universities is neither uniform nor upto the mark. What steps in the system of examinations should be introduced to remedy this malady.	A National Council of Education in Agricultural Sciences should be constituted on the lines of the National Council of Rural Higher Education. (Rec. 128)	The recommendation of the Study Team was accepted.
5	State Level :		
	(a) Agricultural universities and the present structure.	..	The existing pattern of the agricultural universities was considered satisfactory.
	(b) Every State should have an Agricultural University. Union Territory should be attached to the neighbouring Agricultural Universities.	Agricultural universities should be started in the remaining States also at the earliest possible time, if possible, within the Fourth Five Year Plan. (Rec. 100).	It was agreed that the States which have not yet established agricultural universities should do so at an early date. Union Territories and smaller States who were not in a position to establish an agricultural university should be attached to the neighbouring states with agricultural universities for this purpose.
	(c) Whether all agricultural, veterinary and the like institutions should be constituent colleges of the agricultural universities wherever necessary (there should be no agricultural institution outside the agricultural universities).	..	All agricultural/veterinary/dairy/fisheries institutions and college should form constituent units of the agricultural universities.
	(d) Whether teachers training colleges for agriculture, animal science, forestry fisheries, etc. are necessary.	The Teachers Training Institutions for equipping agricultural teachers should be reorganised and brought within the fold of agricultural universities. (Rec. 121).	The recommendation made by Study Team was accepted. But where such institutions do not exist, these institutions should be developed.

1	2	3	4
	(e) Whether separate polytechnics for the above subject are necessary? (f) Can Gram Sevaks Training Centres be converted into agricultural polytechnics ?	Such of the Gram Sevak Training Centres and other training institutions which are well developed should be converted into agricultural polytechnics. There should be close collaboration between the agricultural polytechnics and the various agro and agro processing industries in the one hand and the Agricultural Universities on the other. Agro and agro-processing industries should provide apprenticeship for students undergoing training in the polytechnics. (Rec. 122).	The idea of agricultural polytechnics was accepted. It was, however, suggested that more emphasis should be placed on the practical contents of training. It was agreed that such Gram Sevaks Training Centres and other training institutions which are well developed should be converted into agricultural polytechnics.
	(g) Can short courses for farmers, their sons and wives and daughters be introduced?	The scheme of training of farmers, their wives and their sons which the Ministry of Agriculture has initiated recently with an outlay of Rs. 14 crores in the Fourth Plan period is not realistic. It helps only for proliferation of administrative machinery without any result of effectively educating and enthusing the farmers. Hence the scheme should be dropped. (Rec. 123).	While agreeing with the Study Team's recommendation, it was considered that training of farmers, their wives and sons, was necessary and that this training should be conducted through display of posters, circulation of literature, film shows, radio programmes and tours. These tours may be conducted on the farms of progressive farmers for a period of 3-4 days.

6 **Apprenticeship :**		
Should there be provision for apprenticeship for : (a) Post Graduates (b) Graduates (c) Diploma course (d) Gram Sevaks	There should be provision for apprenticeship for every student in colleges of agricultural sciences where he gets the degree. This should be one-year and completed on the farm or farms of recognised scientific farmers approved by the university. This period may be recognised as paid for. (Rec. 126).	The recommendation of the Study Team was accepted.
(e) Places where apprenticeship can be given : (i) State farms ; (ii) Agricultural Universities farms ; (iii) Experimental farms ; (iv) Farms run buy agricultural cooperative Associations.	The existing Block Seed Farms and other farms maintained by the Agriculture and allied Departments and Agricultural universities should be utilised for demonstration purposes. The Block Seed Farms should be converted into seed-*cum*-demonstration farms. These farms should be the focal point for extension work in each block. (Rec. 124).	It was felt that apprenticeship could with advantage be given on State farms, agricultural university farms, experimental farms, progressive farmers' farms and farms run by agricultural cooperative associations. Training in agriculture, dairy, fisheries, machinery etc. should also be included in polytechnics. No certificate, diploma or degree should be given unless apprenticeship of one year for graduates and six months for diploma course was undergone.
(f) What should be the general qualification to students for admission into agricultural polytechnics?	..	The minimum qualifications for certificate courses should be secondary education and for diploma courses a pass in S.S.L.C. and Higher Secondary or pre-university course for degree course.

1	2	3	4
7	Are the text books for instruction considered upto standard? If not, what measures are suggested to improve them ?	There should be a better rural bias in general education. To facilitate this, radical changes should be introduced in the text-books at the elementary and secondary stages of education (Rec. 120).	It was agreed that there should be a better rural bias in general education and to facilitate this necessary changes be introduced in text books.
8	What should be the medium of instruction in the institutes, colleges and universities ?	We would like the agricultural sciences to be taught in regional languages. The Agricultural Universities should make arrangements as quickly as possible to promote the writing of regional language text books by technical experts and to prescribe these for various other courses. Till this materialises it is necessary that English should continue as a medium of instruction. In recommending this, we are more concerned with the need to ensure standards in agricultural education as there are no suitable text books in regional laguages in agricultural sciences,. The post-graduate training in agricultural sciences should continue to be in English till adequate facilities by way of regional language text-books and publications are available (Rec. 127).	The recommendation of the Study Team was agreed to.

9	How can education in agriculture, animal sciences and fisheries be made rural-biased and vocational?	(i) There should be a better rural bias in general education. (Rec. 120). (ii) Agricultural education should be made truly vocational (Rec. 129).	The recommendations made by the Study Team were accepted. Of the apprenticeship period one month should be spent in rural area.
10	How can best use be made of Gram Sevaks for agricultural programmes? Are they adequately trained to guide farmers?	..	The present capability of the Gram Sevaks was rather poor and they should be provided with more orientation training.

CHAPTER III

EXTENSION

Agricultural extension has three major roles—supply of inputs indicated by research as necessary for a desired output, transfer of knowledge relating to maximisation of the effectiveness of the inputs applied and feed back channel for information from the farmers to the scientists so as to ensure against the factors limiting the yield. If a good extension machinery exists, the time gap between discovery and application is reduced and at the same time research workers are kept busy finding answers to problems of immediate relevance to the farming community. Research and extension have, therefore, a symbiotic relationship and if this symbiosis is fostered through adequate administrative, political and financial support, a continuous rise in the economic field per unit can be achieved without detriment to the long-term productivity of the soil.

Recent research strategy aims at exploiting fully the favourable features of our agricultural situation, namely the existence of abundant sunlight and fairly extensive water resources. The development and release of high yielding varieties in the major cereals and millets have enabled a farmer with a holding of only 3 to 4 acres to derive a net income of over Rs. 3,000/ per year. Such yield and income possibilities have provided the motivation necessary for the farmers to take a whole set of new cropping patterns and practices. Therefore, the extension agency assumes great significance for ensuring the maximum return to the farmer from his investment on inputs and to the country the maximum production from the existing fertilizer and water resources.

There is a very wide extension network in the country. As in every other field of human endeavour, any striking impact of the extension agency, such as the excellent work done in Tanjore and Ludhiana IADP Districts, can be traced to an outstanding individual extension leader. The field extension staff, by and large, have been unable to win the respect of farmers, because of their poor technical and practical knowledge. They have, therefore, relied heavily on their control over inputs supply to invite visits from farmers.

While the number of farmers to be contacted is very large, the number of gifted and well-informed extension workers is few. Progress in the scientific methods of destroying yield barriers and manipulating yield and quality on the other hand should be very rapid. The price of most of the inputs is among the highest in the world and the availability is low. This aspect of the question needs important attention at the hands of both Centre and State Governments.

Together with inputs the need for increasing as speedily as possible the technical competence of the field extension staff, so that knowledge concerning the qualitative aspect of inputs use can be rapidly spread. Because of the magnitude, and urgency of the problem, thought should be given to the evolution of new information transfer-techniques which would help the country to reap rapidly the fruits of recent scientific research and thereby help rise from the mire of economic recession and dependence on world charity. It is also necessary to evolve closer administrative linkage between research and extension.

The extension workers must be conversant with modern production technology. Practical experience rather than a printed package of practices can help them to win the respect and the following of farmers.

All these problems which are closely linked were discussed in great detail. A comparative statement indicating the issues raised for discussion, the recommendations made by the study Team on Agricultural Administration and those by the Seminar and also the organisational chart for extension service at various levels are attached.

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AGRICULTURAL ADMINISTRATION

Comparative Statement showing the issues raised for discussion in the Seminar and the recommendations made by the Study Team on Agricultural Administration and the recommendations of the Seminar

Agricultural Extension

Sl. No.	Issues for consideration	Recommendations of the Study Team on Agricultural Administration	Recommendations of the Seminar
1	2	3	4
1	Organisational Charts as at present : (a) National Level (b) State Level (c) Divisional Level (d) District Level (e) Block Level (f) Village Level (Please see pp. 65-68)	The Directorate of Extension in the Ministry of Food, Agriculture, Community Development and Cooperation should be abolished forthwith, Functions relating to international aspects, national obligations and responsibilities pertaining to extension and coordination among the States should be handled by a top level technical specialists in extension of the rank of a Joint Secretary. He should work in close coordination with the I.C.A.R. (Rec. 135).	(a) The Directorate of Extension and training at the National level should not be abolished as recommended by the Study Team. Instead the results of research emanating from the national Institutes should have an agency at the Central level for the quickest and speediest transmissions to the State, District, Block and Village level. The Extension Directorate has also the important function of evolving a strategy for agricultural production at the national level. (b) The Agricultural production Commissioner in the state who coordinates at the sceretariat level all the agricultural and allied development Departments, should look after extension service as well. (c) The Divisional level development organisation should be dispensed with. (d) There should be two Collectors in a District. One of them should be specifically charged with the function of coordinating all developmental

	programmes including extension work in agriculture and all allied programmes as in the opinion of the Seminar the Collector is a more suitable person to bring about coordination, occupies as he does a prestigeous place. The other should look after Law and Order, revenue, etc.
	(e) The Block Development Officer should be a technically qualified person preferably an agricultural graduate. The Study Team prefers the name of an 'Agricultural Extension Officer' to that of 'Block Development Officer'. The latter sounds better in the view of the Seminar because the B.D.O. has to deal with not only agriculture but also other developmental works. Below the Block level i.e. at the village level 3 or 4 agricultural assistants are recommended for all extension work in the Block. This is considered too insufficient and the seminar would prefer the present system of Gram Sevaks who may be replaced gradually by subject matter graduates at the rate of about 1 for 10 village.
	(f) The village level worker should be an agricultural graduate. However in view of the rapidly changing service science & technology, re-orientation training should be provided for all Gram sevaks according to the need of the situation.
2 **What should be the relationship and responsibility at each level.**	2. Under the present circumstances when considerable disparity existed in the various States the Centre alone was in a position to coordinate guide and develop. The Directorat of Extension and Training should act as a catalytic agent to spur the States to greater activity and adoption of new technological methods and research results

1	2	3	4
			at their command. In the States the Agricultura Production Commissioner should be responsible for extension service flowing to the field through the District Collector (Development), B.D.O. and the Village Level Workers who should preferably be technically qualified in the field of agriculture.
3	What should be the relationship of Agricultural Department with Extension.	The responsibility for field extension work should be with the Department of Agriculture Development. The pattern of Agricultural administration we have suggested would be definitely more effective in serving the needs of farmers for increasing their agricultural production. The Seed-cum-Demonstration farms should be the focal points for extension work in the blocks. (Rec. 131)	3. It was agreed that the responsibility for field extension work should rest with the Commissioner for Agricultural Production according to the organisational chart at p. 68. There should be a single line of command avoiding any diffusion of responsibility.
4	(a) What should be the relationship of Universities and Research Institutes with Extension.	Agricultural Universities should be responsible for strengthening and supporting the field extension agency; Subject Matter specialist being the link between the Department of Agriculture-Development and the Agricultural Universities to facilitate flow of new ideas from the Universities to farmers and feed back of agricultural problems of farmers to Universities. (Rec. 133).	(a) The Seminar agrees with the recommendation of the Study Team. But the subject matter specialists who are supposed to be the link between the Department of Agriculture and Agricultural Universities should be located at the University level only.

(b) Whether subject matter specialists at district level are nacessary in addition to District Officers.	Subject Matter Specialists at the State and District levels, appointed acccording to the reguirements of the area, should be under the administrative and technical control of the Agricultural Universities. Subject Matter technicians below the District level should be under the control of the Department of Agricultural Development. Effective intercourse should be maintained between the Subject Matter Specialists of the universities and the Subject matter Technicians of the Department to ensure that the field extension agency is continuously enriched in scientific knowledge. (Rec. 134)	(b) The Seminar considered that subject matter specialists in addition to the district level technically qualified officers would be a heavy burden resulting in the proliferation of administration. Therefore the District level officers may be sent for refresher courses to Agricultural Universities, periodically so that they may be up-to-date.
5 What should be the relationship of Panchayati Raj with Extension.	The impact of Panchayati Raj on Agricultural production has been very discouraging. There has been frustration everywhere both among the elected representatives and the officials. (Rec. 11)	5. It was considered that the Pandhayati Raj Institutions should function only in an advisory capacity in respect of agricultural production programmes.
6. How can agro and agro-processing industries be associated towards promotion of extension methods.	Agro and agro-processing industries should play an effective role in contributing to increased agricultural production through linking of processing, marketing and the services including the extension of technical know-how to farmers. (Rec. 132)	6. The recommendations of the Study Team were accepted.

1	2	3	4
		Vertical integration of Indian agriculture implies linking farmers with agro and agro-processing industries in respect of their requirements, such as credit, inputs, marketing and processing, and in turn farmers supplying their agricultural produce to these industries. This is a symbiotic relationship between the farmers and these industries for their mutual advantage and prosperity. Rec. (303) Large number of agro and agro-processing industries should be started in rural areas and linked with farmers. If a sizeable segment of Indian Agriculture is organised in the vertical integration pattern, Government will be relieved of many of the functions which it now performs rather poorly. Government will be left free to concentrate on its legitimate activities and responsibilities. (Rec. 304)	
	Other recommendations :	I. The Agricultural Extension Agency has so far suffered from unrealistic attitudes and frequent changes in priorities and emphasis. The basic requirements of farmers and methods of approach to them have been largely neglected.	The recommendations of the Study Team were accepted.

II. The extension agency should discharge the following functions :—

- i. to educate the farmers in a scientific agriculture and to enthuse them to adopt the same;
- ii. to solve the problems of farmers in the field of agricultural production; and
- iii. to ensure supplies and services to farmers required for agricultural production (Rec. 130)

NATIONAL EXTENSION COUNCIL

The seminar is of the view that in order to bring about a closer link between the Extension Agency at the Central and the State Department of Agriculture as also the Agricultural Universities and for quick transmission of results from the National Level to the State and vice-versa and also to tackle emergent agriculture and allied problems that may arise in any State, or States it is desirable that a National Extension Council is set up.

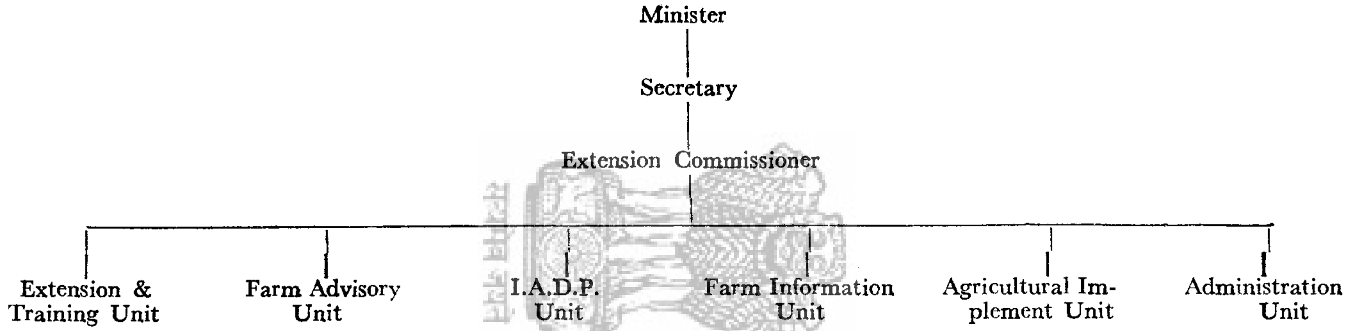
The Council may be presided over by the Additional Secretary (Extension) and shall consist of State Directors of Agriculture, Animal Husbandry and Fisheries and the Extension Directors of the Agricultural Universities.

This Council shall have the responsibility of reviewing the national extension policies, programmes and problems.

This Council may meet once in a quarter or as often as is necessary.

National Level (Existing set-up)

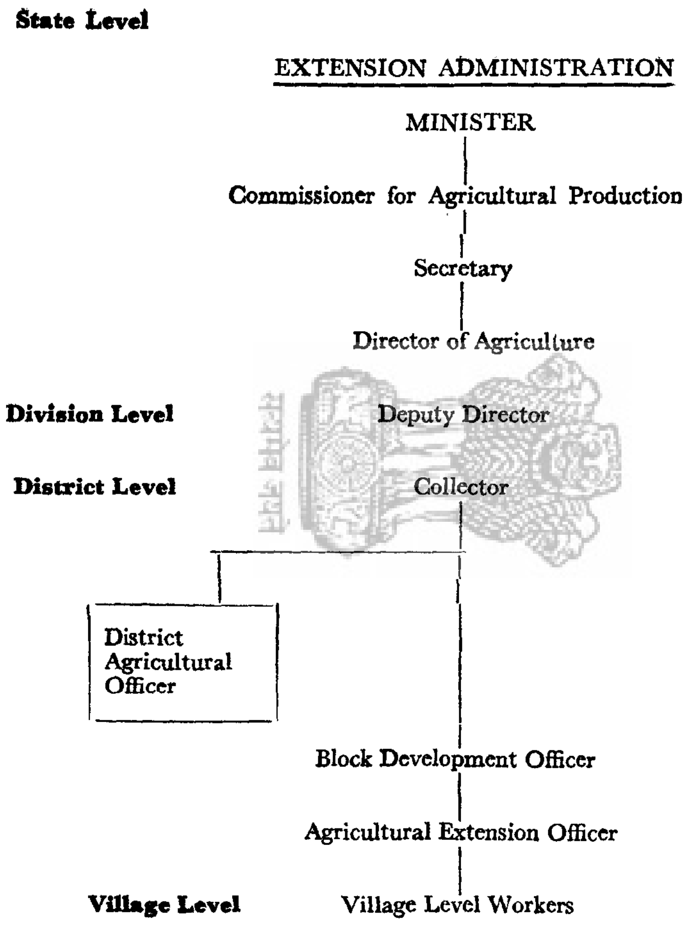
EXTENSION ADMINISTRATION



The Directorate functions through Regional Directors located at Madras, Hyderabad, Ahmedabad, Patna, Delhi in their important programmes and they also act as liaison officer.

(Existing Set-up)

EXTENSION ADMINISTRATION



National Level

(As recommended by the Seminar)

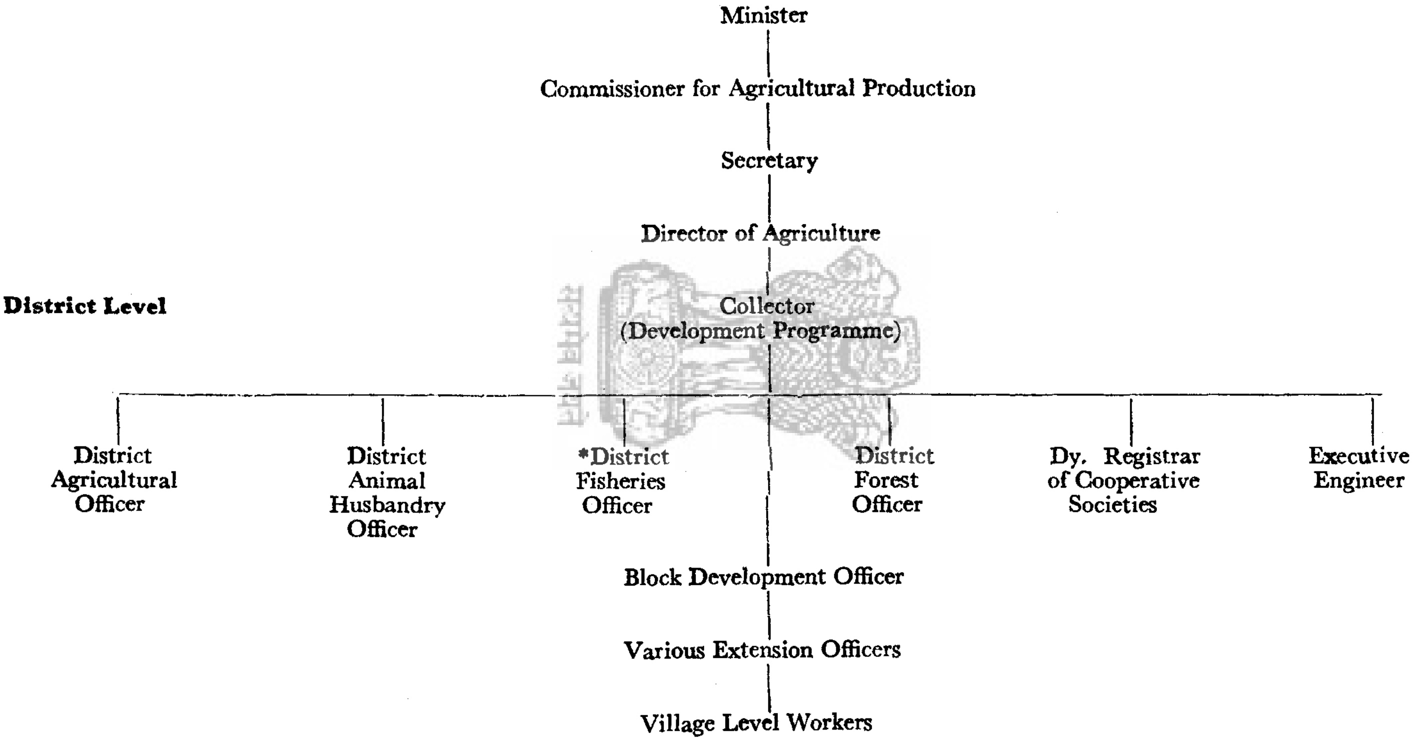
EXTENSION ADMINISTRATION

- MINISTER
  - Secretary
    - Additional Secretary (Extension)
      - Agricultural Extension Commissioner
      - Animal Production Extension Commissioner
      - Fisheries Extension Commissioner
      - Extension training Farm Information Advisory Unit.

State Level

(As recommended by the Seminar)

EXTENSION ADMINISTRATION


Minister
Commissioner for Agricultural Production
Secretary
Director of Agriculture
District Level
Collector (Development Programme)
District Agricultural Officer
District Animal Husbandry Officer
*District Fisheries Officer
District Forest Officer
Dy. Registrar of Cooperative Societies
Executive Engineer
Block Development Officer
Various Extension Officers
Village Level Workers

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*In States where fisheries potentiality exists.

CHAPTER IV

AGRICULTURAL ADMINISTRATION

The history of agricultural administration in India dates back to the year 1866 when the proposals for a special Department of Agriculture originated with the Commission appointed after the famine in Bengal. The pattern of agricultural administration both at the Centre and in the States has undergone several changes consequent on the suggestions made by various Commissions and Committees. Among them the more important being the Famine Commission of the last century, the Royal Commission on Agriculture, the Irrigation Commission, the Fiscal Commission, the Grow More Food Campaign Enquiry Commission, the Nalagarh Committee, the U. N. Committee and the Ram Subhag Singh Committee. Besides the Public Accounts Committee and the Estimates Committees of the Parliament and State Legislatures have commended on several aspects of agricultural programmes.

2. One noticeable impact on the agricultural adminisrration consequent upon the five year plans has been the inception of the Community Development programme and the Panchayati Raj. While the former aimed at solving the rural development problems and provided an administrative set up at the Block level as a unit of administration and planning, the latter provided an institutional backing for democratic decentralisation. These programmes, however, have not come up to the expectation. The Community Development programme started as a multi-purpose programme with social welfare objectives, was later transformed into an agricultural oriented programmes It, however, lacked the impulse desired to be created and resultesd in another Government Department with dissipated energy and initiation. Similarly, the Panchayti Raj Government created more problems instead of solving them, *viz.* political intrusion in the field.

3. Another aspect of five year plan had been the proliferation of various departments at all levels from the national to the field level. The increasing funds earmarked for the agricultural and allied programes through these plans, developed another tendency of establishment of various departments at the State level and below without an effective coordination. Thus there appeared to be a requirement of functionaries belonging to agriculture, animal husbandry, fisheries, irrigation cooperation, Community Development at all levels. The various levels of authorities hindered rather than helped growth of the programme. Another drawback was the diffussion of authority and leadership and encouragement of supicion and bitterness between the officials and non-officials at the districs and block levels. This needs a thorough review for an effective and integrated approach towards agricultural development.

4. Starting from the Gram Sevaks at the village level there are Agricultural Extension Officers, Cooperative Extension Officers, Animal Husbandry Officers, etc. at the block level. They are working under the administrative control of the Block Development Officer and in turn of the District Administrative Officers and the Collector and Zila Parishad.

5. At the district level there is a District Agricultural Officer supported by a number of Technical Assistants. Along with officers of the Department of Agriculture at the District level, there are District Officers of Horticulture, Cooperation, Marketing, Fisheries, Irrigation and Animal Husbandry and Veterinary Departments. Coordination among them is sought to be brought about through District Coordination Committees and Joint Development Councils or Zila Parishads.

6. At the State level there are departments of Agriculture, Animal Husbandry, Horticulture, Fisheries, Cooperation, Marketing and Irrigation working independently. Dr. Ram Subhag Singh Committee recommended to coordinate their efforts through the Agricultural Production Commissioner. The Planning aspect is looked after by the Planning Department. The Cabinet Sub-Committee for Agricultural Production takes the policy decisions.

7. The independent approaches of the various departments to agricultural development had percolated down to the village level with the result that farmers still had to approch several agencies to get help. This included assistance for supplies and services, redress of grievances, credit, etc. The compartmentalised approach of these departments had resulted in a good deal of duplication and overlapping of functions besides wastage of efforts both financial and manpower.

At the national level, the Ministry of Food, Agriculture, Community Development and Cooperation comprising four departments is responsible for the agricultural development programme. The Ministry of Irrigation and Power deals with all aspects of irrigation and power excepting minor irrigation which is handled by the Ministry of Food, Agriculture, Community Development and Cooperation. This Ministry consists of the following wings:

(1) Production ;
(2) Forestry ;
(3) Fisheries ;
(4) Inputs (F) ;
(5) Inputs (M) ;
(6) Land problems;
(7) Special Development Programmes; and
(8) Coordination.

9. The Ministry is also assisted by the following attached /subordinate offices:

(i) I. C. A. R.

(ii) Directorate of Extension and Training.

(iii) Directorate of E. & S.

(iv) Direcorate of P. P. Q. & S.

(v) Directorate of Marketing.

10. The administrative machinery plays an important role at all levels and in the context of the latest strategy and expectations to achieve a break-through in the agricultural production and be self-sufficient by 1971, it is important that the technical and administrative machinery is oriented and strengthened to achieve that goal.

11. For a better understanding of the need for reforms in agricultural administration present set-up at various levels and also those prevailing in other countries are attached. These are :

(i) Ministry of Food, Agriculture, Community Development and Cooperation (peges 72—79) .

(ii) Agriculture Department, U. S. A. (page 80).

(iii) Agriculture Department, Canada (page 81).

(iv) Agriculture Department, Japan. (page 82).

(v) State Agriculture Department, U. P. and Kerala. (pages 83-85).

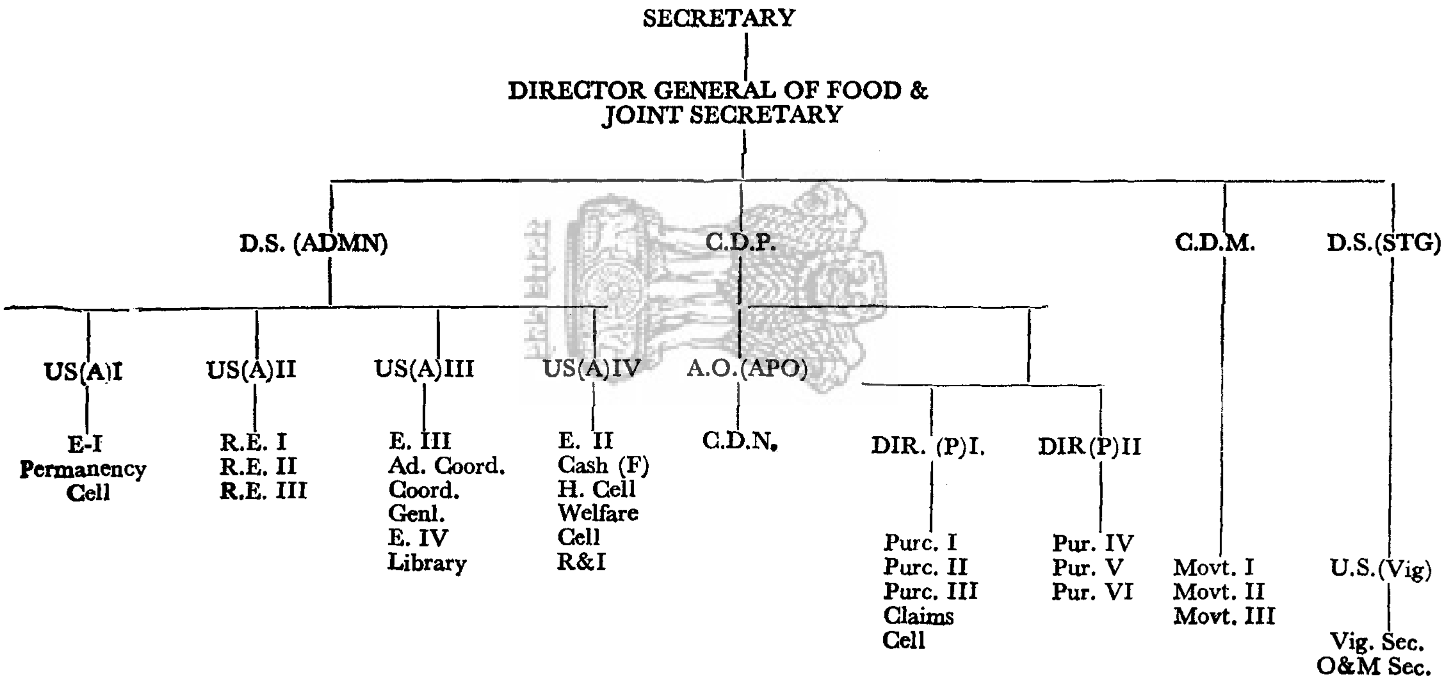
Emerging out of the discussions in the Seminar a comparative statement showing the issues raised for discussion, the recommendations made by the Study Team and also those by the Seminar is attached (pp. 86-117). Relevant organisational charts at the various levels *viz.* National, State, District, Block and Village level as proposed by the Seminar are attached at the appropriate places.

National Level

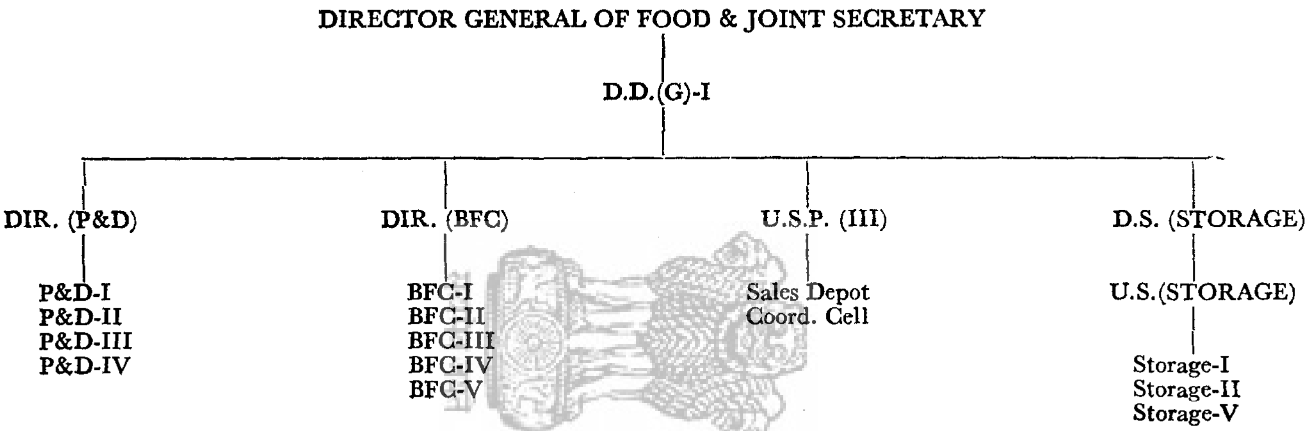
(As existing)

MINISTRY OF FOOD, AGRICULTURE, C.D.&C.

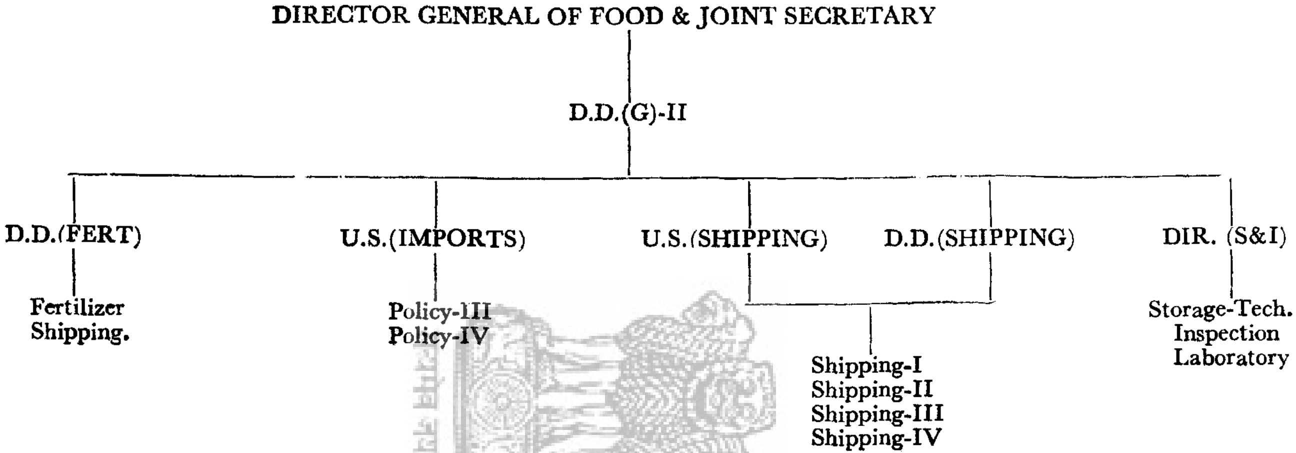
(DEPARTMENT OF FOOD)



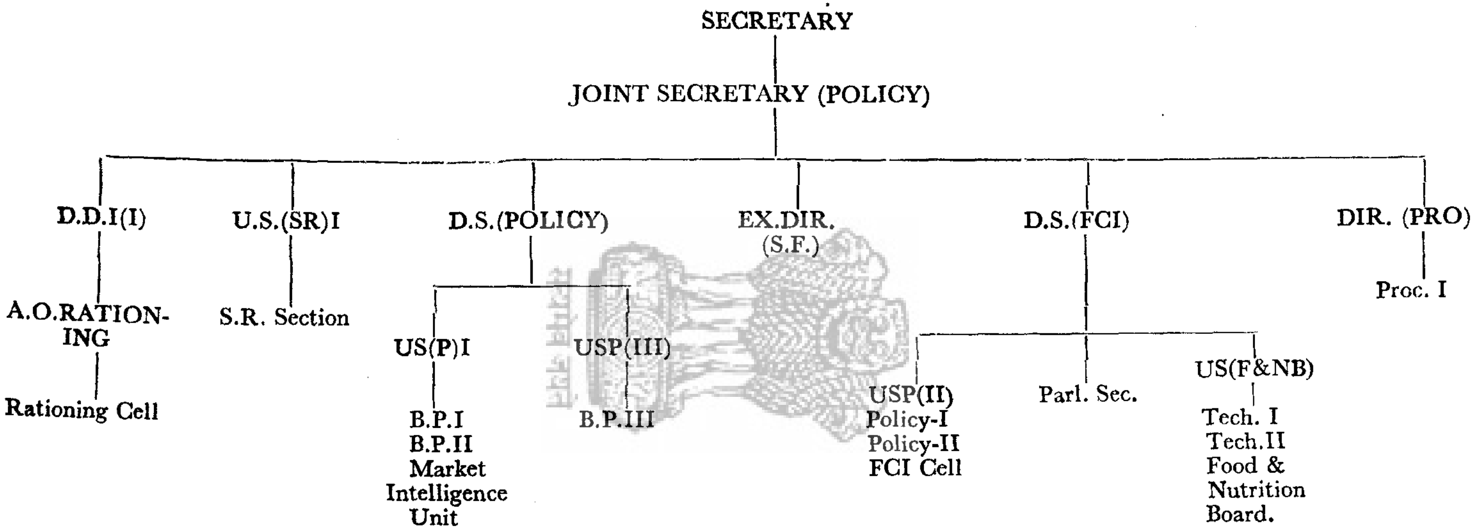
National Level



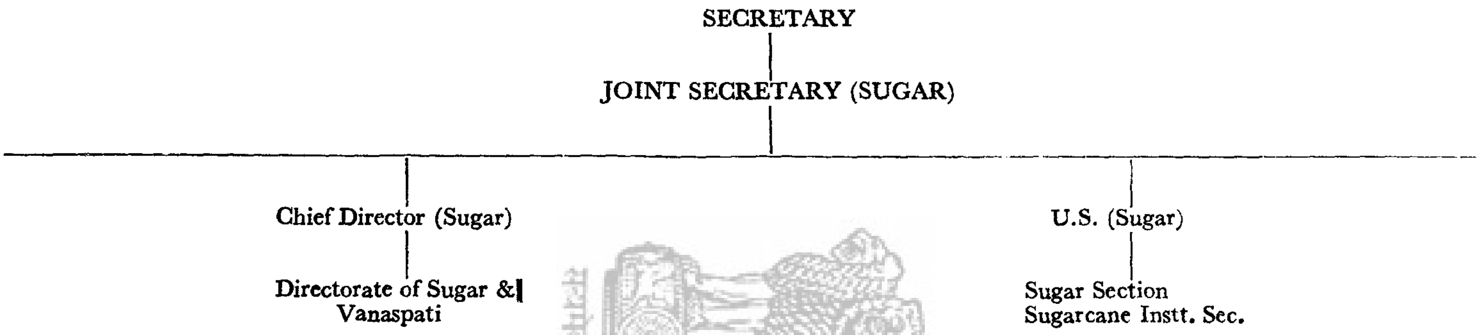
National Level



National Level

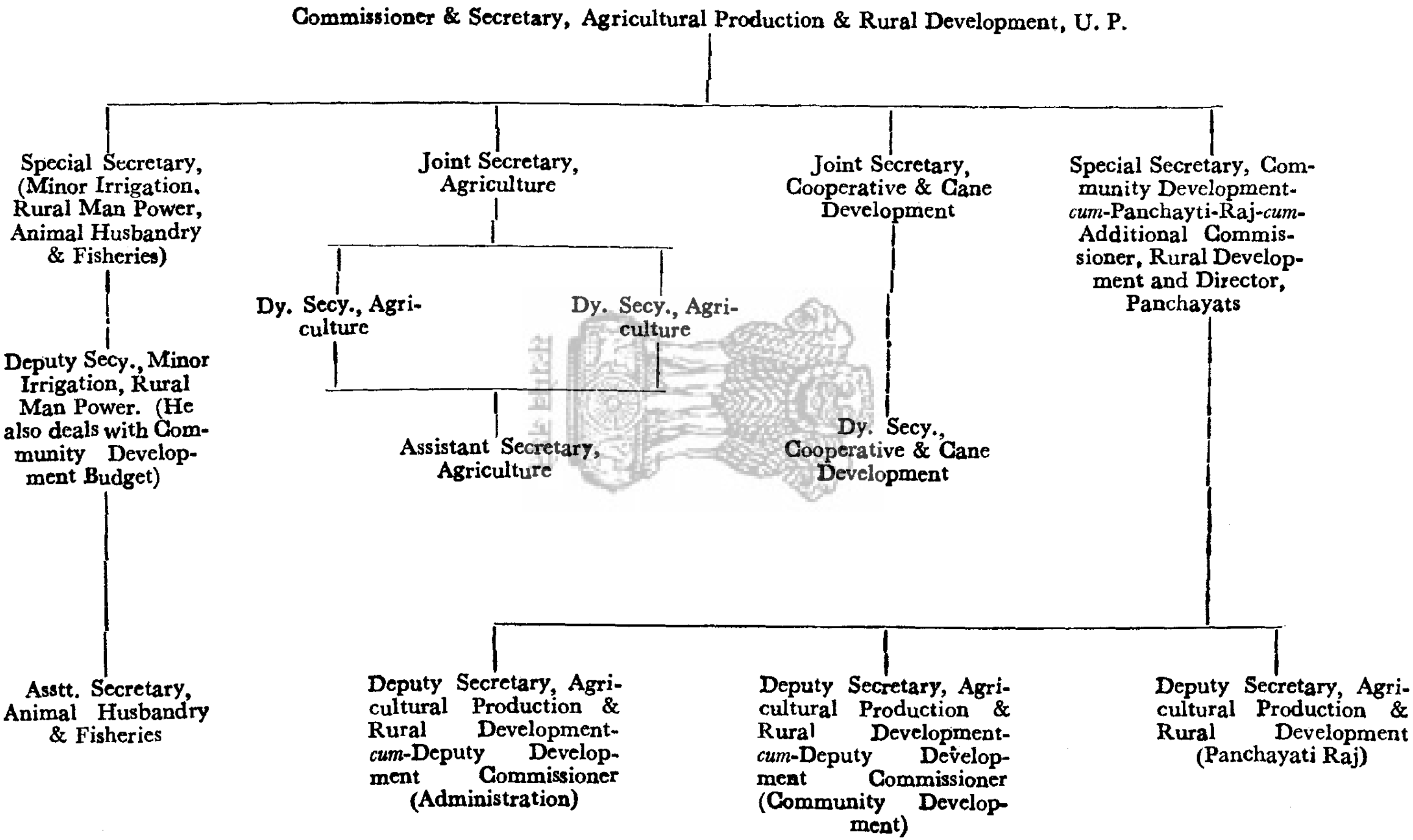


National Level

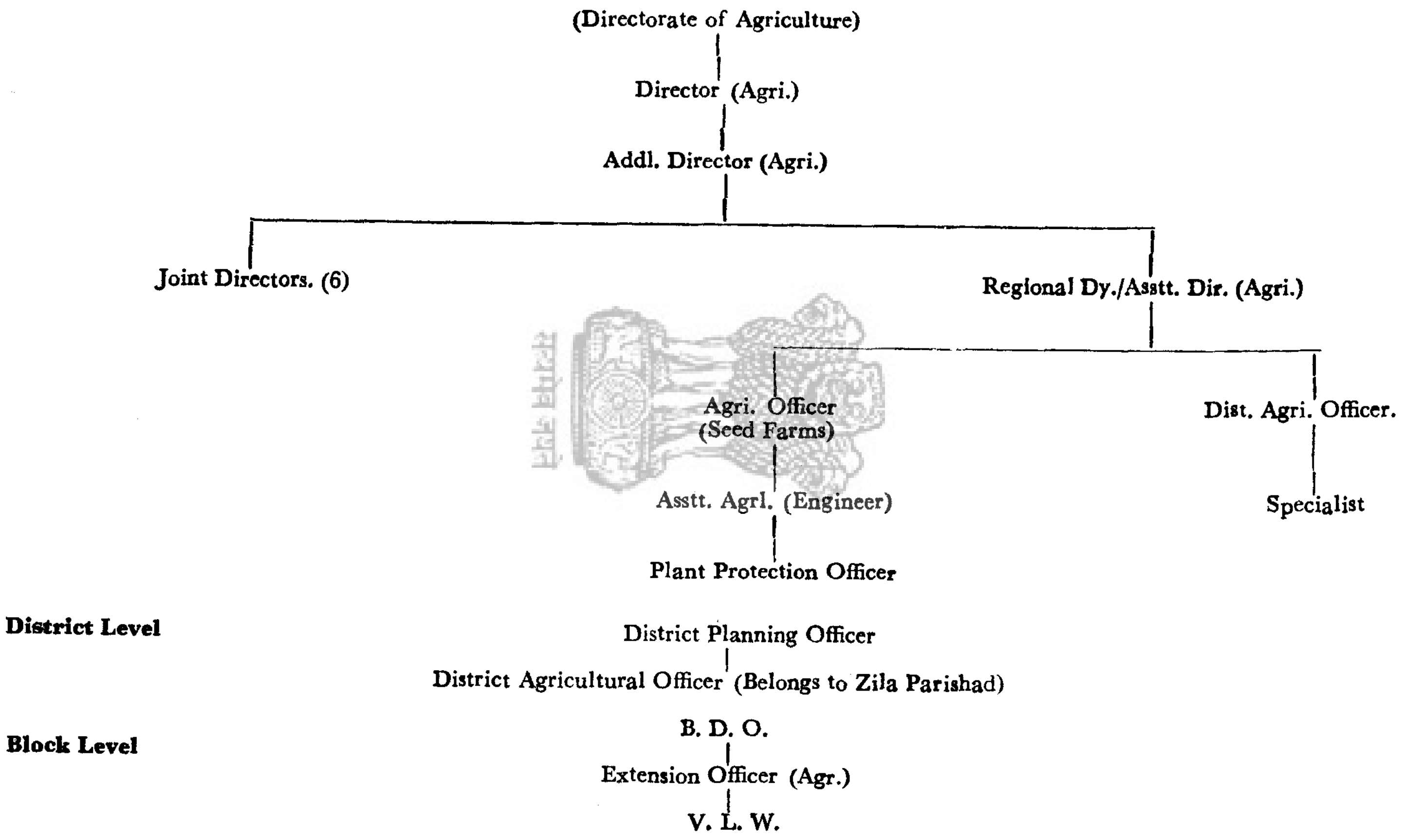


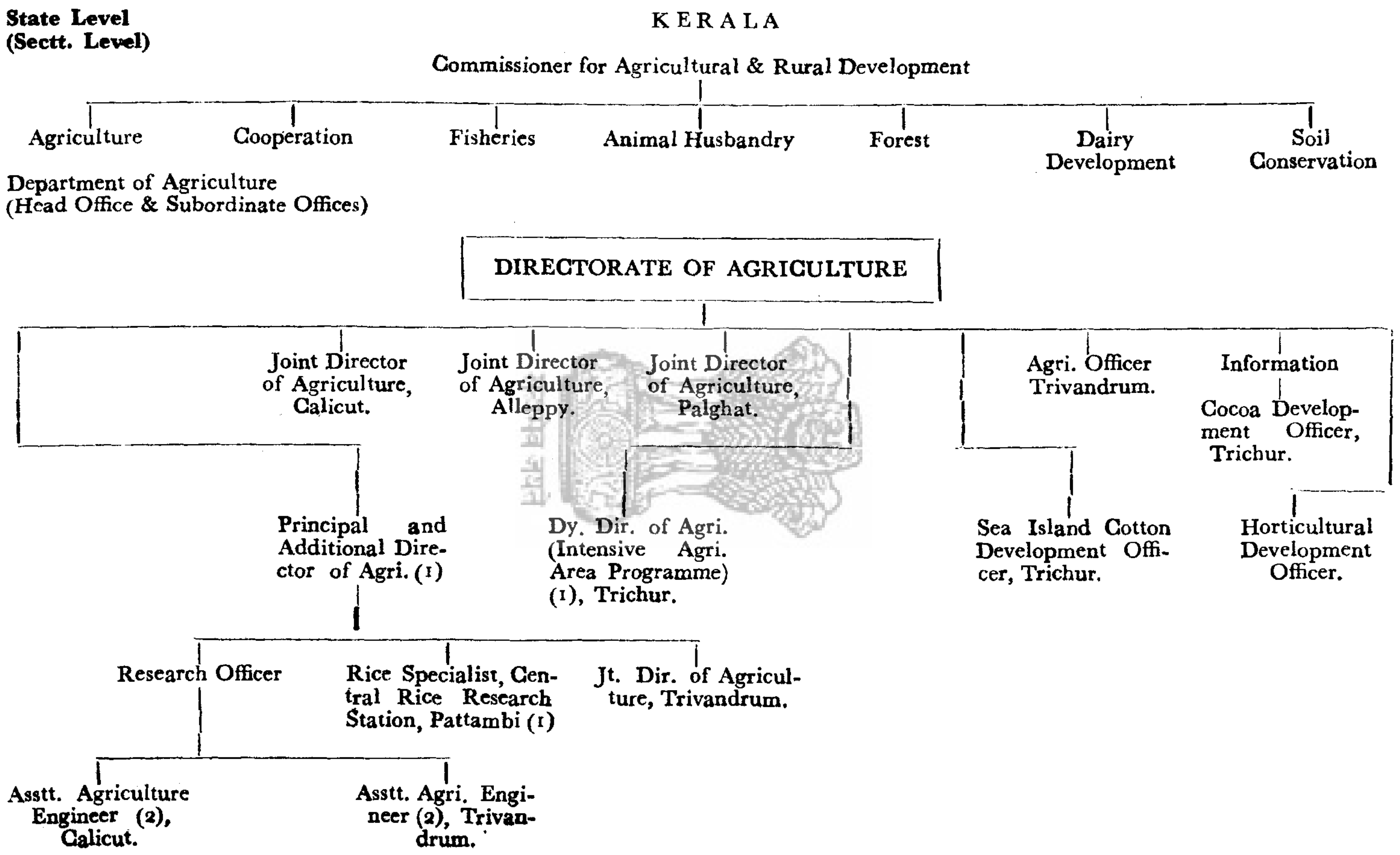
सत्यमेव जयते

UTTAR PRADESH


Commissioner & Secretary, Agricultural Production & Rural Development, U. P.
Special Secretary, (Minor Irrigation, Rural Man Power, Animal Husbandry & Fisheries)
Deputy Secy., Minor Irrigation, Rural Man Power. (He also deals with Community Development Budget)
Asstt. Secretary, Animal Husbandry & Fisheries
Joint Secretary, Agriculture
Dy. Secy., Agriculture
Dy. Secy., Agriculture
Assistant Secretary, Agriculture
Joint Secretary, Cooperative & Cane Development
Dy. Secy., Cooperative & Cane Development
Special Secretary, Community Development-cum-Panchayti-Raj-cum-Additional Commissioner, Rural Development and Director, Panchayats
Deputy Secretary, Agricultural Production & Rural Development-cum-Deputy Development Commissioner (Administration)
Deputy Secretary, Agricultural Production & Rural Development-cum-Deputy Development Commissioner (Community Development)
Deputy Secretary, Agricultural Production & Rural Development (Panchayati Raj)

UTTAR PRADESH




State Level
(Sectt. Level)
KERALA
Commissioner for Agricultural & Rural Development
Agriculture
Cooperation
Fisheries
Animal Husbandry
Forest
Dairy Development
Soil Conservation
Department of Agriculture
(Head Office & Subordinate Offices)
DIRECTORATE OF AGRICULTURE
Joint Director of Agriculture, Calicut.
Joint Director of Agriculture, Alleppy.
Joint Director of Agriculture, Palghat.
Agri. Officer Trivandrum.
Information
Cocoa Development Officer, Trichur.
Principal and Additional Director of Agri. (1)
Dy. Dir. of Agri. (Intensive Agri. Area Programme) (1), Trichur.
Sea Island Cotton Development Officer, Trichur.
Horticultural Development Officer.
Research Officer
Rice Specialist, Central Rice Research Station, Pattambi (1)
Jt. Dir. of Agriculture, Trivandrum.
Asstt. Agriculture Engineer (2), Calicut.
Asstt. Agri. Engineer (2), Trivandrum.

AGRICULTURAL ADMINISTRATION

Comparative statement showing the issues raised for discussion in the Seminar and the recommendations made by the Study Team and the Seminar

National Level

S. No.	Issues raised	Recommendations made by the Study Team on Agricultural Administration	Recommendations of the Seminar
1	2	3	4
1	The present set up of Agricultural Administration and discussion thereon. (*vide* Charts at pp. 72-79)	1. The Deptt. of Food at the Centre should be closed down with the transfer of most of the functions pertaining to procurement and distribution of foodgrains to the Food Corporation of India, and other functions to the appropriate agencies and the States. The residuary functions relating to the promotion of production of subsidiary foods, etc., should be handled by the Division of Agricultural Production in the Ministry of Agricultural Development we have suggested. The Divisions of Policy and Agricultural Marketing should handle matters relating to food policy and related	Recommendation of the Study Team No. 1 to 7 considered as follows — 1. The recommendations of the Study Team about the abolition of the Deptts. of Food, Community Davelopment, and Cooperation and Directorates of Extension and Training, Plant Protection, Quarantine and Storage and Marketing, were considered by this Seminar to be too drastic. Under the present stage where State Administration has not been developed fully to take up the responsibilities involved in these schemes, the Centre has to play a vital role in providing guidance in all aspects of agricultural production including livestock, minor irrigation, forestry and cooperation. The Centre should function not only as financing partners with the State but certain amount of supervisory and coordination work should be the responsibility of the Centre. Under these circums-

matters. This would result in a net savings of about Rs. 3¼ crores on staff pay and allowances; and the saving should be utilised to support the F.C.I. and for investment in commercial enterprises. The FourthPlan schemes with an outlay of Rs. 107.64 crores should be utilised in supporting the Food Corporation of India and the Commercial enterprises. (Rec.368)

2. The Department of Community Development in the Ministry should be closed. This would result in a net saving of Rs. 50 lakhs per annum on staff pay and allowances. The National Institute of Community Development should be transferred to the Ministry dealing with local self-government affairs. (Rec. 370)

3. The Directorate of Extension in the Ministry of Food, Agriculture Community Development and Cooperation should be abolished forthwith. Functions relating to international aspects, national obligations and responsibilities pertaining to extension and coordination

tances, recommendations of the Study Team for reorganisation of the Ministry into one Deptt. with 10 Divisions was not agreed to.

2. The Department of Food may be merged with the Department of Agriculture after the former has shed most of its functions relating to the procurement, distribution, and storage of foodgrains to the Food Corporation. The residuary functions of the Department of Food may be retained in a Wing attached to the Department of Agriculture. However, the stage at which this should be done is when Food Corporation has been fully developed for all the functions of food procurement, storage, and distribution.

3. Department of Cooperation should exist as at present since it is to provide to the States not only necessary agricultural finances but also the guidence in respect of the Cooperation movements like service cooperatives, consumers cooperatives and every other types of cooperatives so as to help the nation to evolve a Cooperative community in every sphere of economic activity.

4. Community Development and Panchyat Raj and Cooperation have to be merged into a single department.

5. In so far as the Directorates of Extension and Training, PPQ&S and Marketing and

National Level—*Contd.*

1	2	3	4
		among the States should be handled by a top level technical specialist in extension of the rank of a Jt. Secy. He should work in close coordination with the ICAR (Rec. 135)	Inspection are concerned, they will have to be retained for reasons stated above. 6. The recommendations of the Seminar with regard to the agricultural administration at the national level are indicated in Chart on page 99.
		4. The Directorate of PPQ&S, as it is now, should be abolished. (Rec. 246)	(a) Cabinet is in charge of laying down policies for Agriculture, Community Development and Cooperation and Panchayati Raj.
		5. The Ministry of Agricultural Development which we have proposed, should have a top level specialist supported by a minimum number of assistants in the Agricultural Production Division to look after Locust Control, quarantine service, international obligations, national problems and policies and interstate coordination. (Rec. 247)	(b) Ministry of Agriculture, Community Development and Cooperation should have a Cabinet Minister. He should be assisted by 4 Ministers of State and if necessary Deputy Ministers should also be given. (c) One Minister of State will assist the Cabinet Minister in respect of Strategy Research, Planning. Education Training, and Extension. Each of the Research and Extension Wings should be under an Additional Secretary who would have Deputy Director Generals on the research side for different functions and Extension Commissioners (Agriculture, Animal Production, Fisheries) on the extension side.
		6. Most of the functions which the Directorate of Marketing and Inspection at the Government of India level are performing at present should be transferred to ICAR (Research) and the States. (Rec. 299)	

7. The Department of Cooperation should also be abolished and matters pertaining to co-operative finance and marketing should be dealt with by the appropriate Ministries. (Rec. 370)

8. The Department of Agriculture should be reorganised on functional lines. There is no necessity for the many divisions and wings as they exist today, since all aspects of research should be transferred to the ICAR and other development functions to the States. The Central Department of Agriculture should be concerned with international obligations, national policies and problems, and inter State coordination. These functions will not require such a huge machinery as it is to day. The reorganised pattern we have suggested would not cost more than Rs. 1 crore at the cost on the staff pay and allowances. This will result in a net saving of nearly Rs. 4½ crores per year which should be invested in Agricultural Development Corporations in the States and other commercial enterprises. (Rec. 371)

(d) The Second Minister of State will assist the Cabinet Minister in respect of inputs administration and agricultural marketing. Subjects include such as agricultural production programmes, horticulture, food crops, cash crops, development of feed & fodder, inputs like fertilizers, improved seeds and agricultural implements, plant protection minor irrigation, under ground water resources development, soil conservation, agricultural marketing including export promotion, international relations, foreign collaborations Agricultural Prices Commission, Food & Policies governing national level corporations relating to agriculture.

(e) A Third Minister of State will assist the Cabinet Minister in animal husbandry, fisheries and forestry development. Subjects include such as veterinary aid, livestock development, fisheries, forestry and processing industries related to the above subject.

(f) The Fourth Minister of State will assist the Cabinet Minister in Community Development and Cooperation. He shall deal with all types of cooperation, agriculture marketing, consumer cooperations, processing cooperations, agro-industries, cooperative farms and consolidation of holding including Community Development and Panchayat Raj.

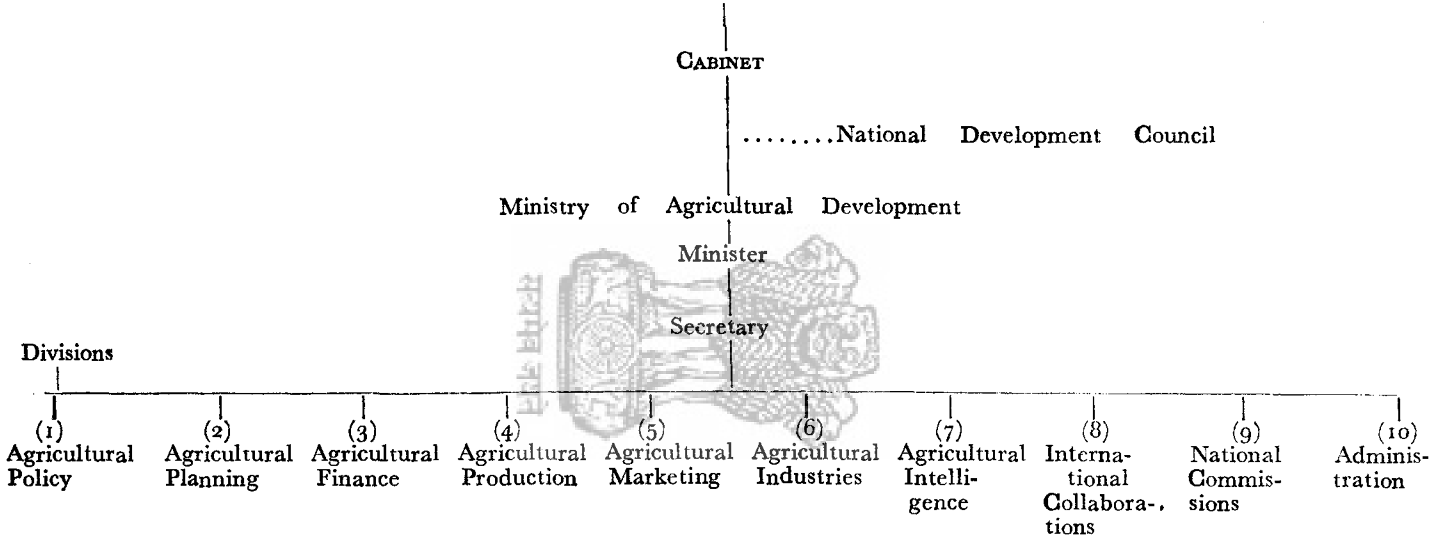
सत्यमेव जयते

1	2	3	4
		9. There should be a Ministry of Agricultural Development at the Centre with the following Divisions : (i) Agricultural Policy; (ii) Agricultural Planning; (iii) Agricultural Finance; (iv) Agricultural Production; (v) Agricultural Marketing; (vi) Agricultural Industries; (vii) Agricultural Intelligence; (viii) International Collaboration; (ix) National Commissions; and (x) Administration. (Chart p. 98) (Rec. 382).	
2	Select Committee on Agricultur		The recent innovation in the Parliament functioning *vis-a-vis* agriculture is the introduction of a system of appointment of select committee of the Parliament of U. K. to consider the activities in England and Wales of the Ministry of Agriculture, Fisheries and Food. This new set-up is both an important constituional innovation

and a further movement in the direction of a more effective Parliamentary concern with the process of administration. It is considered necessary that such a Parliamentary Commitete should be appointed with similar functions performed with Members consisting of both Houses of Parliament in addition to the Estimates Committee to assess the performance of the Ministry in respect of (i) research, (ii) education, (iii) training, (iv) extension, (v) community development, (vi) Panchayat Raj, (vii) cooperation.

Conclusion.—Running the Government is a stupendous responsibility affecting the lives of the millions. The principles of able and sound statesmanship in administration is a factor of great importance. The Ministerial level in administration should be like an engine to the train. Master mind in the portfolio concerned would be of utmost help to the efficiency in administration. Political consideration for appointments at the ministerial in preference to knowledge, merit test and devotion to the subject would be disastrous.

ADMINISTRATIVE ORGANISATION FOR AGRICULTURAL DEVELOPMENT AT THE ALL-INDIA LEVEL


CABINET
........National Development Council
Ministry of Agricultural Development
Minister
Secretary
Divisions
(1) Agricultural Policy
(2) Agricultural Planning
(3) Agricultural Finance
(4) Agricultural Production
(5) Agricultural Marketing
(6) Agricultural Industries
(7) Agricultural Intelligence
(8) International Collaborations
(9) National Commissions
(10) Administration

(We have not considered the working of the Forestry wing. It has to remain as a division of the Ministry of Agricultural Development.)

AGRICULTURAL ADMINISTRATION

Comparative statement showing the issues raised for discussion in the Seminar and the recommendations made by the Study Team and the Seminar

State Level

Sl No.	Issue	Recommendations of the Study Team	Recommendations of the Seminar
1	2	3	4
1	State Government	..	The State Government will formulate agricultural policy for the State within the overall framework of national policy.
2	State Development Council . . .	Chart P. 107 Please see Chart P. 107	The State Development Council is superfluous.
3	State Board for Agricultural Development	There should be a State Board of Agricultural Development presided over by the Minister for Agricultural Development. Subject to the indications to be given by the Government in regard to guidelines, priorities and finances the Board should prepare the plans and programmes for agricultural production. The Commissioner for Agricultural Development should be the Secretary of the Board. Heads of allied departments like Forestry, Public Works, and Irrigation should be represented on this Board. The Chairman of Agricultural	The State Board for Agricultural Development is assigned the work of agricultural planning. The seminar feels that agricultural planning is an integral part of the total economic plan of the country as a whole and as such agricultural planning must fit in with the overall planning in the country under the Planning Commission at the Centre and should form part of the entire economic planning of the country. Technical programme planning is the main function at the State Level. This need not be done by a huge body such as the one envisaged by the Study Team. Planning of the technical programme has got to be done by subject-matter specialists in each of the subjects. At present the subject-matter specialists are constituted at the Directorate level. Therefore, the Seminar

State Level—*Contd.*

1	2	3	4
		Development Corporation, the Vice-Chancellor of the Agricultural University, the President of the Farmer's organisation, the President of the Chambers of Commerce and Industry, representatives of agricultural industry and trade, and representatives of various types of farming enterprises should be members of this Board. (Rec. 377)	see no necessity for constitution of the State Board for Agricultural Development, Moreover, the Study Team envisages giving the assistance of a panel of experts to the State Board for Agricultural Development as will be seen in the Chart. It is hardly possible that the matter of planning technical programmes can be further improved by the State Board for Agricultural Development once these programmes have been prepared by the panel of experts. The question now arises as to where this panel of experts must be situated. It is to be determined whether this panel of experts should be at the Secretariat level, or the Directorate level. This matter is being referred to in the recommendations following. Moreover the counterpart of the Central Planning Commission are proposed to be set up at the State level. Several States have already done so; therefore the Seminar see no reason for State Board for Agricultural Development for purposes of Agriculture and other development planning.
4	Agricultural Development Corporation	National level corporations for agricultural enterprises have not been of much help in stimulating the production and distribution of agricultural inputs. On the other hand, they have only proliferated national level organisations without stimula-	The Seminar is of the opinion that it was premature that national corporations should be wound up in the absence of any alternative organisation to look after the work of the various national corporations set-up. The Agricultural Development Corporations in each State, as envisaged by the Study Team may take time to establish themselves. In the meanwhile, it would be very

ting the initiative and competence at the operational levels, viz., the State. Hence, all the national level corporations engaged in agricultural development excepting the Food Corporation of India, should be abolished. (Rec. 179)	injurious to disrupt the work of the various Corporations which have been playing a dominant role in the matter of supplying inputs essential for agricultural development. However, the Seminar is of the opinion that wherever lacuna exists in the present set-up of national corporations, the State should launch on corporations only to fill up the gaps and not in addition to the work of the National Corporations. It may be necessary that State Level Corporations should be floated as is being done at present in the field of development of agro-processing industry. The Seminar is of the opinion that the National Corporations like the Seed Corporation, the Fertilizer Corporation, etc. have developed a line of action which has made substantial progress and their abolition at the present stage will be very injurious. While the State Corporations, as and when they are established, would look after the State's needs, the national level corporations look after the needs of the country as a whole and function as a national grid for these activities.
The agro-industries corporations recently started in some of the States are not suitable for the purpose of promoting the production, distribution and marketing of agricultural inputs and for referring various services to farmers. They should be reorganised and expanded, and their terms of reference changed to fit in to the new proposal we are making herewith. (Rec. 180)	
Each State should have Development Corporation for promoting and supporting the agencies currently engaged or to be set-up in the fields of production, distribution and marketing of agricultural inputs and in extending the various services to farmers. This Corporation should not displace any organisation. It should not compete with any of the field agencies. Its responsibility is mainly promotional. (Rec. 181) (P. 113)	

STATE LEVEL —*Contd.*

1	2	3	4
		The Agricultural Development Corporation should be completely autonomous. Its operations should be purely commercial. Government control should be absolutely minimum. (Rec. 182)	
		The Agricultural Development Corporation should undertake the promotion of three major fields of activities, viz., Land Development, Supplies & Services, and Development of Agro and Agro-processing Industries. This, it should take up by extending financial support to the agencies engaged in the field for these activities. (Rec. 183)	
		The capital of the Agricultural Development Corporation should come from Central and State Governments, Reserve Bank, Commercial Banks, and Agricultural Refinance Corporation. Besides, the Corporations may also issue debentures guaranteed by Govt. These Corporations should have at least Rs. 10 crores as their initial capital. (Rec. 184)	

5. **Department of Agricultural Development** .	The Commissioner for Agricultural Development should have a small committee at headquarters consisting of the heads of divisions and subject-matter specialists. This committee should meet frequently and take decisions on all matters pertaining to the work in the Department. He should be responsible for Developing the team spirit among all members of this committee so that every member could feel that he is intensely involved in the planning and implementation of the programmes. (Rec. 380)	The Seminar agrees with this recommendation, though the functions as defined later, will be only that of coordination of all developmental work in the field of agriculture and allied subjects.
	There should be a Department of Agricultural Development Consisting of the following divisions : (i) Agricultural Planning; (ii) Agricultural Finance; (iii) Agricultural Production; (iv) Agricultural Marketing; (v) Agricultural Industries; (vi) Agricultural Supplies & Services; (vii) Agricultural Extension; (viii) Training in Agricultural Administration; (ix) Irrigation (Agricultural aspects); (x) Regulatory work; (xi) Agricultural Intelligence; and (xii) Administration. (Rec. 379) (*See* chart P. 114)	*Agricultural Planning* :—As has been already stated at the State level only technical programme planning has to be done which will be ultimately fitted into the overall national planning. As such a separate division for Agricultural Planning is considered unnecessary since subject-matter specialists will draft the technical programme planning. *Agricultural Finance* :—The Seminar notes that the function of the Division of Agricultural Finance is, according to the Study Team, "look after all aspects of agricultural finance including cooperative credit". Since the Seminar is of the opinion that a separate Cooperation Department, as is the case now, should be continued, which will look after all agricultural finance, including cooperative credit in addition to cooperative credit for

STATE LEVEL—*Contd.*

1	2	3	4
			non-agricultural purposes, this Division under the Department of Agriculture, is considered unnecessary.
			Agricultural Production:— The Seminar understands that the Study Team wants a division of this kind for crop and live-stock production, "Animal Husbandry, Fisheries, Horticulture, Field Crops, Forestry etc. are included in this Division as Branches". The Seminar notes that this Division of Agricultural Production is to be headed by a specialist. It is impossible to conceive that this specialist will have the specialised knowledge of agricultural production, live-stock production, fisheries production, horticulture and several other subjects, connected with the production. Therefore, the Seminar does not agree that the entire production division should be headed by a single specialist. The seminar is also of the view that it would be very injurious to include Agricultural, Animal Husbandry, Horticulture, Sericulture, Forestry etc. as branches of this Division of Agricultural Production. Each one of these subjects is so very important that the assignment of this subject as branches of one Division would be very injurious. Therefore, the Seminar is of the opinion that Agriculture, Animal Husbandry and Forestry should remain Departments because of their importance to the national economy and the differing nature of the subjects.

Agricultural Marketing : *Agricultural Industries :* *Agricultural Supplies & Serivces :*	The Seminar is of the opinion that in addition to these three divisions, a division for agro-processing industries needs to be created. The Agricultural Industries Division may more appropriately be called Agricultural Engineering.

Agricultural Intelligence :—This is a very important work. The recommendation of the Study Team is "the organisation for agricultural intelligence should be strengthened from the village level upto the national level. This is all the more urgent in view of the fact that we are handicapped now for want of correct factual basis for planning and formulation of policies. A Division of Agricultural Intelligence has been suggested in the proposed Agricultural Department both in the States and the Central Levels". The Seminar is not able to understsand how this Division is supposed to work from the village level to the national level. After all, at the village level the revenue records give the area under each crop village-wise. These are pooled together at the Tehsil, which are again pooled at District level and then at State level, to arrive at the area under each crop. Crop cutting experiments on random sampling basis are done by the gazetted officers of the Agriculture Department to determine the average yield and thus arrive at the total out turn of each crop at the

1	2	3	4
			State level. It is not indicated by the Study Team how the matters would be improved if separate Division is set-up at the Secretariat level both at the Centre and the States. On the other hand the Seminar feels that the present method of booking crops sown field-wise by the village patwari is subject to verification by the Revenue Officials like Revenue Inspector, Tehsildar, Sub-Collector, Collector on the basis of a small proportion of the total number of fields sown. The verification of these figures is often doubted. In the opinion of the Seminar, it would be advantageous to see that Gram Sevaks inspect the correctness of the booking by the village Patwari field-wise at the first stage. This should be further checked and verified by the Extension Officer concerned village-wise at least upto 10% of the bookings. The Block Development Officer should similarly inspect and verify a minimum of 5% of the total bookings village-wise. The District Agricultural Officer, like-wise should verify the bookings as far as possible, whenever he visits villages. This will give prestige to extension staff while ensuring more reliable agriculture intelligence. This data should be compiled at the District level by the District Agricultural Officer also apart from the revenue sources. The Economics and Statistics Division now working at the State and Central Levels is found sufficient for the purpose.
			Agricultural Extension:—The Seminar agrees with the Study Team.

		Training in Agricultural Administration:—This is superfluous and no Division is required for this. *Irrigation (Agricultural aspects):*—Minor Irrigation plays an important part in agricultural development and especially in the development of underground water resources. For this purpose a Division seems necessary. Monsoon plays the most vital role in the agricultural production. Failure of monsoon means disaster. The only way to offset this disaster of failure of monsoon is to make use of underground water resources for agricultural production. Therefore, the Seminar feels that an Underground water Resources Development Corporation is necessary at both Central and State level to undertake a huge network of wells and tube-wells all over the country particularly in the Indo-Gangetic plain right from the West Pakistan border to the East Pakistan border where an ocean is said to be buried under the soil. Indo-Gangetic plain alone can feed the nation if fullest use of underground water resources is made for agricultural production. *Regulatory Work :*—Being of minor importance separate Division is not necessary.
6. Integration of various Departments	**At the State Level, the Departments of Agricultural, Horticulture, Animal Husbandry, Fisheries, Marketing etc., should be integrated. The Department of Cooperation should be abolished and the staff utilised elsewhere. There should be a single line of command from the State level to the village level. (Rec. 367)**	The Seminar agrees with this recommendation at the Secretariat level by setting up an organisation headed by the Production Commissioner assisted by all the secretaries incharge of various departments. The abolition of the Department of Cooperation is not agreed to as this Department has grown enormously both vertically and horizontally and whose function of agricultural credit, consumer, industrial labour, marketing, etc. have assumed a vital importance.

STATE LEVEL —*Contd.*

1	2	3	4
7.	Secretariat at the State Level	The Secretariat at the State Level should be so designed that one department of the Secretariat should deal with all aspects of Agricultural production. The Agricultural Secretariat should confine itself to formulation of policies, servicing the Cabinet, serving the Legislature and reviewing the performance of the Department of Agriculture. (Rec. 378)	The Agricultural Production Commissioner should coordinate the work of all heads (Secretaries) of Departments concerned with the agricultural production and also Directors of Agriculture, Animal Husbandry, Fisheries, Community Development, Registrar of Co-operative Societies, Conservator of Forests, etc. at the Secretariat level. According to the recommendations of the Study Team, the State Level Agricultural Administration consists of (i) Agricultural Development Corporation; (ii) Department of Agricultural Development; and (iii) Agricultural Universities. The Directorate level as it obtains today has been eliminated and the Secretariat level Administration has been directly connected with the District Level Administration. This is a very substantial change proposed. The Seminar discussed this subject at length and came to the conclusion that at the present stage of agricultural development, the intermediatory stage of Directorates between the District and the Secretariat levels cannot be dispensed with. It might be the intention of the Study Team that the work of the various Directorates such as Agriculture, Animal Husbandry, Fisheries, etc. could be taken over by the Divisions proposed,

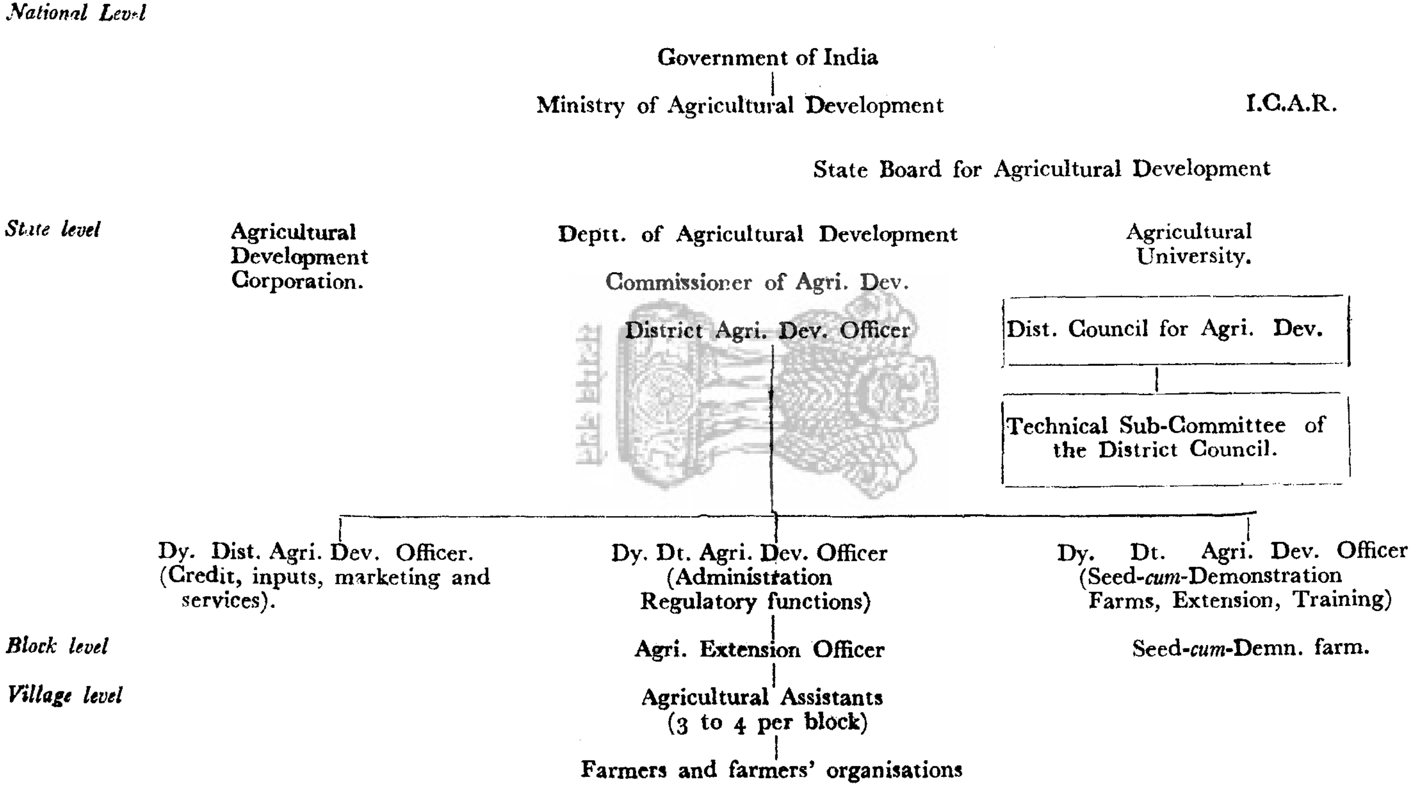
headed by subject-matter specialists at the Secretariat level. This will create a lacuna in the matter of control, inspection, supervision of the production programmes of various Departments if the District Administration work is directly connected to the Secretariat Level Administration. Therefore, the Seminar is of the opinion that the Directorate Level Administration must be retained, as at present. (chart at P. 113)

Based on the recommendations of the Seminar, after discussion of the various aspects of agricultural administration and also taking into consideration the recommendations of the Study Team, the Seminar has drawn up an organisational chart for the State Level Administration as seen in Chart at P. 115. The State Government will be in charge of policy-making, a Cabinet Minister will head the whole Department and he will be incharge of Agriculture, Animal Husbandry, Fisheries, Horticulture, Forestry, C.D. & Co-operation and Panchayati Raj, in keeping with the Central Administration set-up. According to the recommendations of the Seminar the organisational set-up is as follows. At the Secretariat level, there will be a Commissioner for Agricultural and Rural Development, who is the senior-most Secretary and will be incharge of coordination of the various departments as enumerated above. There would be four Secretaries at the Secretariat level. One Secretary will be incharge of Research, Education, Training extension and economics and statistics, another Secretary will

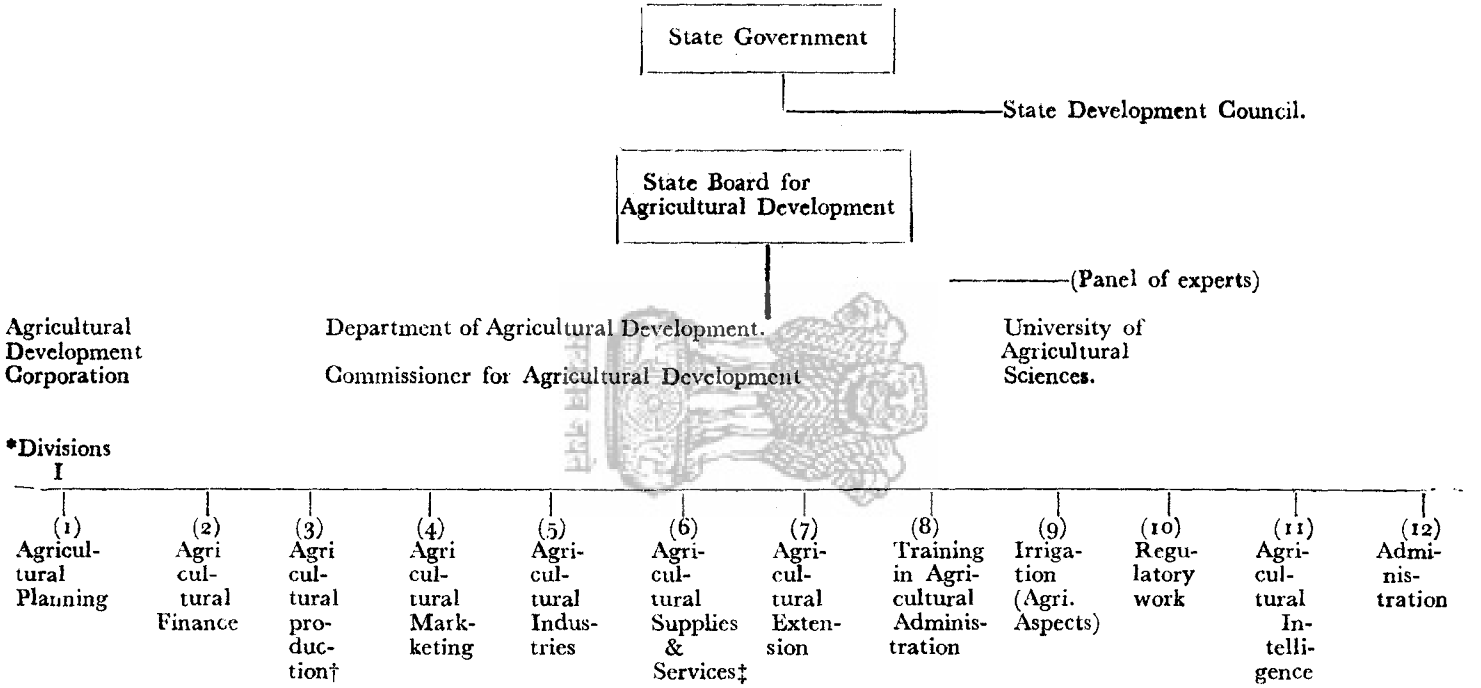
STATE LEVEL—*Contd.*

1	2	3	4
			deal with agricultural production, minor irrigation, under-ground water resources, development & marketing, food, procurement, storage and distribution, supplies and services, agro-processing industries and agricultural engineering. Another Secretary will deal with animal husbandry, production, dairy, milk schemes, fisheries, processing industries and forestry. Intelligence and public relations in respect of agriculture and animal husbandry programmes can be common to both the Departments. Another Secretary will deal with cooperation, agricultural credit, supply of inputs, marketing, consumer and other types of cooperatives, co-operative farming and also Community Development and Panchayati Raj. As at present, below the Secretariat level, there will be the Director of Agriculture, Animal Husbandry, Fisheries, Director/Registrar of Cooperatives, Director of Forestry, and Director of Community Development & Panchayati Raj. It would be preferable to have a separate Minister of State in charge of Research, Education and Training in keeping with the Central pattern in the big States.
			The Seminar has indicated this set-up only as a guide. The detailed allocation is best done by the State Govt. depending upon their actual requirements and situation.

Pattern of Agricultural Administration proposed for the country


National Level
Government of India
Ministry of Agricultural Development
I.C.A.R.
State Board for Agricultural Development
State level
Agricultural Development Corporation.
Deptt. of Agricultural Development
Agricultural University.
Commissioner of Agri. Dev.
District Agri. Dev. Officer
Dist. Council for Agri. Dev.
Technical Sub-Committee of the District Council.
Dy. Dist. Agri. Dev. Officer. (Credit, inputs, marketing and services).
Dy. Dt. Agri. Dev. Officer (Administration Regulatory functions)
Dy. Dt. Agri. Dev. Officer (Seed-cum-Demonstration Farms, Extension, Training)
Block level
Agri. Extension Officer
Seed-cum-Demn. farm.
Village level
Agricultural Assistants (3 to 4 per block)
Farmers and farmers' organisations

Organisation for Agricultural Development at the State level


State Government
State Development Council.
State Board for Agricultural Development
(Panel of experts)
Agricultural Development Corporation
Department of Agricultural Development.
Commissioner for Agricultural Development
University of Agricultural Sciences.
*Divisions
I
(1) Agricultural Planning
(2) Agricultural Finance
(3) Agricultural production†
(4) Agricultural Markketing
(5) Agricultural Industries
(6) Agricultural Supplies & Services‡
(7) Agricultural Extension
(8) Training in Agricultural Administration
(9) Irrigation (Agri. Aspects)
(10) Regulatory work
(11) Agricultural Intelligence
(12) Administration

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*Each division should be headed by a specialist in the respective field, and be called Joint Commissioner or Director or any other suitable designation.

†Agricultural Production includes crop and live-stock production. Animal Husbandry, Fisheries, Horticultures, Field Crops, etc., are included in this division as branches.

‡Agricultural Services include soil conservation, plant protection, veterinary and other services.

AGRICULTURAL RESEARCH ADMINISTRATION

Comparative statement showing the issues raised for discussion in the Seminar and the recommendations of the Study Team and the recommendations made by the Seminar

DIVISIONAL LEVEL

S. N.	Issues raised	Recommendations of the Study Team	Recommendations of the Seminar
1.	Organisation at divisional Level	We don't suggest that the Divisional level set-up should be continued.	The recommendation of the Study Team was accepted.

AGRICULTURAL RESEARCH ADMINISTRATION

Comparative statement showing the issues raised for discussion in the Seminar and the recommendations of the Study Team and recommendations made by the Seminar

DISTRICT LEVEL

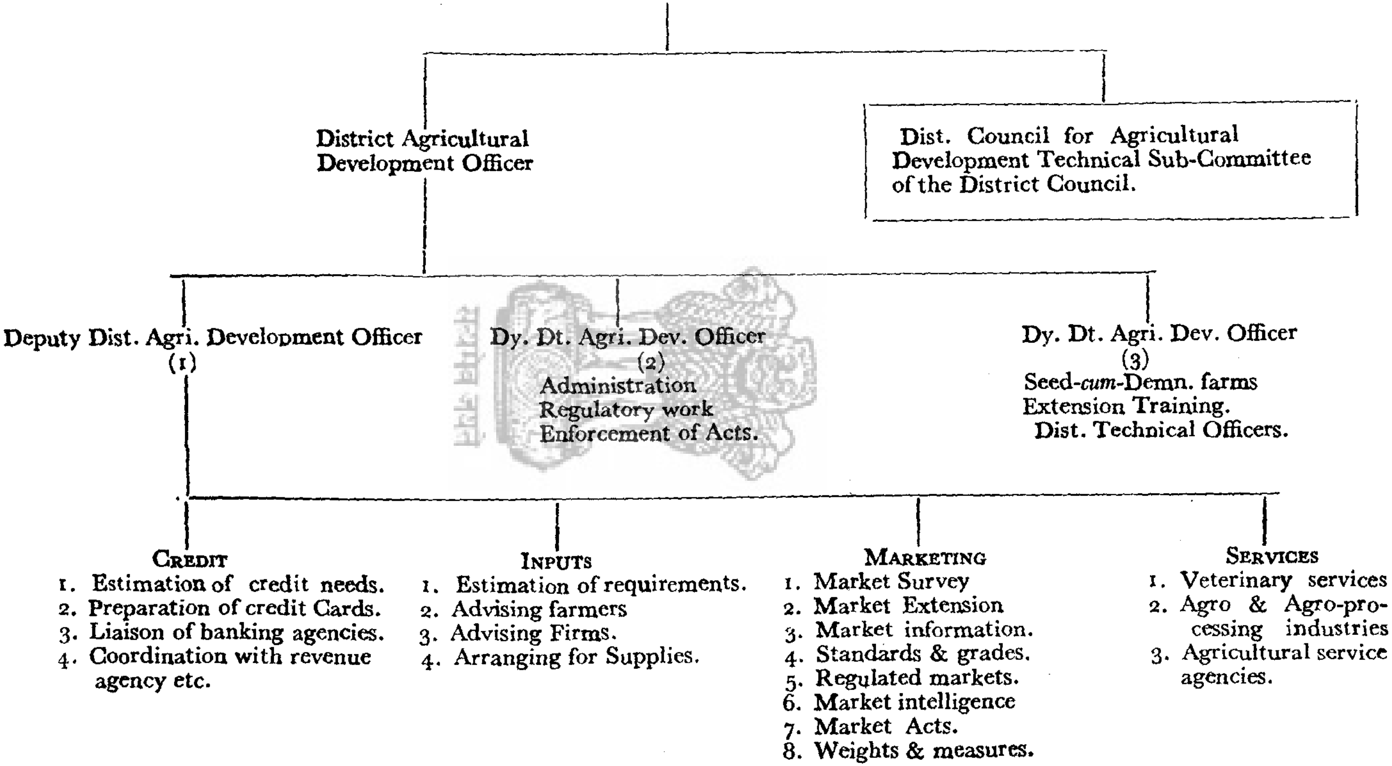
S. No.	Issues raised	Recommendations of the Study Team	Recommendations of the Seminar
1.	Organisation at the district level . .	The District Agricultural development Officer should be of the rank of a Joint Director and his emoluments should be at least on par with that of the Collector. He should have 3 Dy. District Agricultural Development Officers, each being a Class I officer of the rank of a Dy. Director—one to be in charge of agriculture credit, inputs, marketing, and services to farmers, the second to be in charge of administration, regulation of acts, certification and other functions and the third to be in charge of seed-cum-demonstration farms, extension and training, Representatives of Horticulture. Animal Husbandry, Fisheries and other technical fields at the district level should be working with him. (See the Study Team's Chart Rec. 375)	The Seminar considered the question of appointment of District Agri. Development Officer of the rank of Joint Director and his emoluments being equal to that of Collector. This in fact means a Joint Director for every district. It was felt that it would not be possible. Reorganisation suggested would create difficulties in terms of financial resources and availability of suitable technical personnel of desired status. It would not result in economy either. The Collector still occupied the prestigious position and could effectively coordinate the work of all departments of the district. The Collector was overburdened with functions relating to law & order and revenue and therefore he could not devote much attention to agriculture and other development works. It was considered desirable that a separate collector or an additional Collector should be appointed in the District with specific responsibility in regard to coordination of all development works. He would also act as Chairman of Standing Committee on Agricultural Production. The other Collector should look to functions relating to law & order, revenue, etc. (chart at P. 121-122).

		There are to be 3 Dy. District Agricultural Development Officers for the purposes mentioned in the Study Teams' recommendations. The Seminar is of the view that this cannot work satisfactorily because the agricultural production involves agriculture, animal husbandry, minor irrigation, forestry, fisheries, horticulture, cooperative credit etc. Each subject involves different aspects of production requiring specialised knowledge in each case. This being the case, the present set-up of District Officers for agriculture and horticulture, (ii) animal husbandry & fisheries, (iii) minor irrigation, (iv) forestry, (v) cooperative credit, etc. are very necessary. The present set-up cannot be altered. Each district officer on the above subjects will be a subject matter specialist in a way. Therefore, the set-up of 3 Dy. Dist. Agricultural Development Officers as recommended by the Study Team is not acceptable to the Seminar. [The remaining, functions as mentioned in the Study Team's chart don't therefore arise. Please see Chart at P. 121-122.
2. District Council for agricultural development.	A district council for agricultural production should be set-up at the district level and should be made responsible for approving the District Plan for agricultural development and to review the performance. (Rec. 57)	In view of the panchayati raj at the district level and the Standing Committee on Agricultural Production, it is considered superfluous to set up District Council for Agricultural Development.]
3. Technical sub-committee of the District Council.	There should be a technical sub-Committee of this council presided over by the District Agricultural Development Officer and including the subject matter	The Seminar is of the opinion that all the District Officers of various Development could form a Sub-committee with Collector as the Chairman entrusted with the task of laying down technical programmes of the Plan and also execution.

DISTRICT LEVEL—*Contd.*

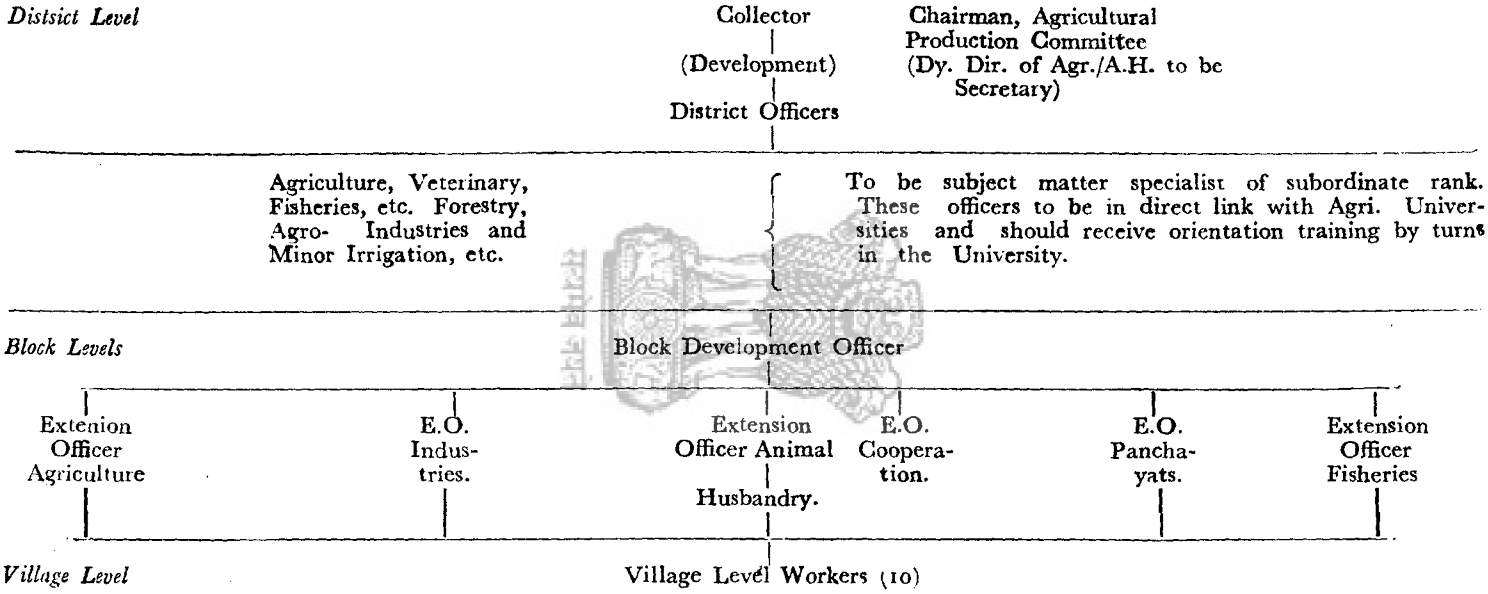
1	2	3	4
		specialists at the district level as members. This Committee should attend to technical aspects including giving guidance to demonstration farms, the technical staff in the district and assessment of performances of the staff. (Rec. 376)	
4.	Community Development and Panchayati Raj.	C. D. & Panchayati Raj have not substantially contributed to increased agricultural production. The objective of coordinating the various services to farmers at local levels has not been fulfilled. On the other hand, these programmes have led to frustration. (Rec. 352)	The Panchayati Raj Institution, according to the Seminar, should be purely advisory bodies in respect of production programmes. However, the Panchayati Raj could be entrusted with municipal functions like health & sanitation, public works, etc.
5.	Evaluation of performance		A committee should be constituted to evaluate the work in each district Block-wise.
6.	Transfers and promotion		The district officers should not generally be transferred within five years. In case of very recognised work, promotion in position or increments may be given. Punishment should be provided for poor performance.

ORGANISATION FOR AGRICULTURAL DEVELOPMENT IN THE DISTRICTS


District Agricultural Development Officer
Dist. Council for Agricultural Development Technical Sub-Committee of the District Council.
Deputy Dist. Agri. Development Officer (1)
Dy. Dt. Agri. Dev. Officer (2)
Administration
Regulatory work
Enforcement of Acts.
Dy. Dt. Agri. Dev. Officer (3)
Seed-*cum*-Demn. farms
Extension Training.
Dist. Technical Officers.
CREDIT
1. Estimation of credit needs.
2. Preparation of credit Cards.
3. Liaison of banking agencies.
4. Coordination with revenue agency etc.
INPUTS
1. Estimation of requirements.
2. Advising farmers
3. Advising Firms.
4. Arranging for Supplies.
MARKETING
1. Market Survey
2. Market Extension
3. Market information.
4. Standards & grades.
5. Regulated markets.
6. Market intelligence
7. Market Acts.
8. Weights & measures.
SERVICES
1. Veterinary services
2. Agro & Agro-processing industries
3. Agricultural service agencies.

(As recommended by the Seminar)

Agricultural Administration
at
District Level and Below


Distsict Level
Collector
(Development)
District Officers
Chairman, Agricultural Production Committee (Dy. Dir. of Agr./A.H. to be Secretary)
Agriculture, Veterinary, Fisheries, etc. Forestry, Agro- Industries and Minor Irrigation, etc.
Block Levels
Block Development Officer
Extenion Officer Agriculture
E.O. Indus-tries.
Extension Officer Animal Husbandry.
E.O. Coopera-tion.
E.O. Pancha-yats.
Extension Officer Fisheries
Village Level
Village Level Workers (10)

To be subject matter specialist of subordinate rank. These officers to be in direct link with Agri. Universities and should receive orientation training by turns in the University.

The functions of the Panchayati Raj Administration should be confined to :

(i) Community Development Programmes.
(ii) Local Self Government Programmes.
(iii) Health and family planning.
(iv) Public works.

AGRICULTURAL ADMINISTRATION

Comparative statement showing the issues raised for discussion in the Seminar, the recommendations made by the Study Team and recommendations of the Seminar

BLOCK LEVEL

S.No.	Issues raised	Recommendations of the Study Team	Recommendations of the Seminar
1	Block level Administration . . .	The Block level Agricultural Extension Officer should be Class II Officer and a technical person qualified in the field of agricultural sciences. His functions should be advising farmers, solving their problems in agricultural production and advising the various agencies supplying the farmers' requirements. (Rec. 373).	The Block Development Officer should be a technically qualified person. He should be responsible for execution of the programmes in all developmental works within the Block. He should be the executive head at the Block level. (Chart at p- 114).
2	Seed-cum-Demonstration Farm. . .	The block seed-cum-demonstration farm should be the centre of all extension work in each block. The demonstration farm manager should be a competent man of the rank of a Class II officer. He should look to the technical sub-Committee at the district level for guidance, etc. (Rec. 374).	This is agreed to wherever Government establishes seed-cum-demonstration farms.
3	Evaluation	..	As recommended under District Administration an independent committee should evaluate the performance of block level. Good performance should be recognised and bad performance highlighed.

AGRICULTURAL ADMINISTRATION

Comparative statement showing the issues raised for discussion in the Seminar, the recommendations made by the Study Team and recommendations of the Seminar

VILLAGE LEVEL

S. No.	Issues raised	Recommendations of the Study Team	Recommendations of the Seminar
1	Village level administration for agricultural development.	There should be 3 to 4 Agricultural Assistants in each block. They should be agricultural graduates. The No. of these Agricultural Assistants should be fixed keeping in view the potentiality of work and the requirements of the area. (Rec..372).	3 or 4 Agricultural Assistants in each block will not be in a position to deliver the goods. The Seminar is of the opinion that extension Officers covering different fields of economic activity depending upon the nature of the Block and the work available should be provided for to work under the Block Development Officers. The village level workers or Gramsevaks occupy a key position with regard to development and production in every field at the village level. There should be one Gramsevak for 8 or 10 villages and he must be a graduate. (Chart at P. 114)
2	Weaker section vis-a-vis administration	..	The economic pattern of population of almost every village is about 10 % of the people produce surplus agricultural products while another 50% can be said to be self-sufficient. 40% of the remaining population are either landless or less-landed. This is the section that is called weaker section of the society. The community Development at present is helpful only to the 60% of the population in their production programmes. 40% of the weaker section are not at all being helped by the C. D. movement. It should be made incumbent on the part of administration to keep regular register of balance-

sheet of the weaker sections of society in each village. Suitable programmes for their economic upliftment in the form of subsidies of getting assignment of waste-lands in their names or providing wells wherever feasible or transferring of such population to areas where employment potentiality exists either in the form of loan or in the form of factory employment should be undertaken. These registers so maintained should record the progress made by each family year after year. The performance at each level should be judged on the basis of the economic improvement of the weaker section of the society in the villages apart from providing technical knowhow inputs, etc. to the landed classes of people, Suitable rewards in case of good work among the weaker sections and punishment for failure of work should be provided for. As indicated by the Study Team, a single line of command right from village level worker to the highest level should be maintained in the interest of discipline and efficient work. The cultivable waste land of every a village must be ordered to be reserved without assignment so that proper distribution of this land may be made among the weaker landless sections of the society.

AGRICULTURAL ADMINISTRATION

The following recommendations of the Study Team on Agricultural Administration are considered functional and promotional in nature and as such the Seminar has no comments to make.

SERVICES

Recommendation No. 354.

Policies in regard to staffing of posts in agricultural administration should be immediately changed so that technical experts can occupy key posts and look forward to their professional, advancement and career prospects.

Recommendation No. 355.

Staff members in agricultural administration should receive remuneration at least equal to that received by personnel in other technical departments at their corresponding levels. In view of the importance and urgency for increasing agricultural production, there is every justification for the staff in the agricultural administration to receive higher scales of remuneration.

Recommendation No. 356.

The sole criteria in filling up posts in agricultural administration should be qualification and 'competence of persons to occupy the respective posts and not their seniority alone. This rule should be applied to all posts irrespective of the level, including the Secretary in the Ministry of Agricultural Development at the Centre.

Recommendation No. 357.

The present policies in regard to recruitment and promotion of staff in agricultural administration stand in the way of their professional advancement. Frequent transfers have aggravated this further.

Recommendation No. 358.

Recruitment to various posts should be done by expert committees at various levels, particularly at the district and State levels. Recruitment to State level posts should be done by a Committee on which a few outstanding experts from outside the State should also be represented.

Recommendation No. 359.

The various posts in agricultural administration should be categorised according to the functions, and the requirements of staff to occupy these posts should be clearly defined on this basis There should be provision for direct recruitment to some of these posts. There should be provision for appointing experts who are known for their valuable contributions in their specialised fields of agricultural production, to key posts at all levels. There should not be any bar in recruiting peopel directly from outside the Government service on contractual basis.

Recommendation No. 360.

There should be provision for supernumerary posts at all levels. 10 to 15 per cent of the posts should be reserved for this so that when competent persons are promoted and have to shift from their present job, they could be retained in the same jobs by giving them higher emoluments. The Fundamental Rules in regard to promotion, protection of emoluments, etc. of staff members in agricultural administration should accordingly be changed.

Recommendation No. 366.

The large numer of personnel working at lower levels in the various departments concerned with agricultural production are not helpful in influencing the farmers to increase agricultural production. Gram Sevaks, Kamdars, Demonstration Maistries, etc. are examples. These posts should be either abolished or transferred to other departments of welfare, etc. Gram Sewaks can be made use of in the Panchayati Raj institutions. The large number of Gram Sevaks presently administered by the Agricultural Departments in some states should be transferred to Panchayati Raj Department. They are technically not adequately competent in the agricultural field.

Recommendation No. 384.

Immediate steps should be taken to constitute the proposed Indian Agricultural Service. The Rules framed should provide for the various recommendations we have made in regard to recruitment, promotion and remuneration for the staff, etc.

General

Recommendation No. 361.

There should be complete decentralisation of functions and responsibilities in agricultural administration. The Secretariat at the State level should confine only to policy matters, legislative functions, and servicing the Cabinet. The executive departments should be given complete freedom to implement the policies. There should not be any interference from the Secretariat level. The head of the department should have all the powers so that he may not approach the Secretariat frequently for sanctions and approvals on routine matters including administrative matters.

Recommendation No. 362.

The agricultural administration should be transformed into a service organisation. The rules and procedures should be simplified. The staff should be given training in this aspect. The lead in this should be given at higher levels.

Recommendation No. 363.

The administrative work-load of the staff members in agricultural administration should be reduced, it may be reduced to the barest minimum. The personnel in agricultural administration should be trained adequately both in the subject matter fields and also in agricultural administrative aspects. While the subject matter training should be the concern of the Agricultural Universities, training in agricultural administration should be organised by the Department of Agricultural Development in collaboration with the various agro-industrial concerns, Agricultural Development Corporation, Agricultural Universities and financing banks. The training facilities already available, particularly in the orientation and Study Centres should be made use of for this.

Recommendation No. 364.

Since agricultural administration cannot be reformed in isolation of other branches of administration, it is necessary that streamlining the administration is initiated forthwith at all levels and in all spheres. Rationalising the agricultural administration is very urgent in view of the critical situation the country is facing in regard to the supplies of food and other agricultural products, and hence this should not be delayed any further.

Recommendation No. 365.

The pattern of agricultural administration to day is unrealistic and is not serving the needs of farmers efficiently. It is weak at the levels nearer to farmers and stronger at higher levels. This should be changed.

Recommendation No, 386.

Development of special areas, such, as desert areas, hilly areas, etc. shoud be taken up by the concerned State Governments. The proposal of the Government of India to Start all-India boards for this purpose, is not a wise move and hence should be given up.

CHAPTER V

PRODUCTION PROGRAMMES AND POLICIES

The Study Team have considered the production programmes and policies in addition to the administrative pattern for agricultural development. These being mainly policies of promotional and functional nature having no direct relation to the administrative set up the Seminar considered it desirable to reproduce them under one chapter-attached. The Seminar had no comments to make. However, recommendations having any bearing to the administrative set-up were duly considered by the Seminar and have been included in the relevant chapters.

Production Programmes and Policies

Policies

1. National Agricultural Policy.
2. Union State Relationship.
3. Machinery for Planning for Agricultural Development.
4. Food Policy.
5. Co-operative Farming.
6. Agricultural Finance.
7. Farmers Organisations in stepping-up Agricultural Production.

Supplies and Services Programmes

1. Production, Distribution and Marketing of improved Seeds.
2. Production, Distribution and Marketing of Fertilizers.
3. Production, Distribution and Marketing of Plant Protection Equipment.
4. Production, Distribution and marketing of agricultural implements.
5. Organisation for development and utilisation of irrigation potential.
6. Organisation of Agricultural Marketing.
7. Soil and Water Conservation Programme.
8. Livestock Development Programme.
9. Role of Agro and Agro-processing industries in Agricultural Development.
10. An Agricultural Development Corporation in each State.

National Agricultural Policy

1. Both the agricultural policies and the way in which these are implemented need critical re-examination in the light of the poor performance in this sector during the last 16 years. (Rec. 23)

2. The national policies in a predominantly agricultural country like ours should be primarily designed to give the highest place for its farmers and for the farming profession. (Rec. 24)

3. The national agricultural policy should provide for the realisation of the following objectives in the shortest possible period :—
    - (i) Conferment of ownership title on land to the tiller.
    - (ii) Securing higher stable income to farmers.
    - (iii) Production incentives including a realistic price policy, an efficient marketing system and crop and livestock insurance against risks.
    - (iv) Easy availability of adequate capital resources to farmers and others engaged in agricultural enterprises.
    - (v) Production and distribution of agricultural requisites in adequate quantities and at reasonable prices.
    - (vi) Development of irrigation potential on top priority.
    - (vii) An infra-structure conducive for rapid agricultural development, and in particular—
        - (a) Large number of agro-and agro processing industries in rural areas with farmers having relationship with these ;
        - (b) A service oriented administrative machinery which is efficient in giving new ideas to farmers, in solving their problems and in ensuring supplies and services to them;
        - (c) A new work of roads and bridges in rural areas and power supplies to agriculture. (Rec. 25)

4. The land reforms policy has not been implemented with the vigour and urgency it demands. Urgent steps should be taken to ensure that the tenants get the ownership rights within a period of two years from now at the most. The legal obstacles should be removed forthwith. Administrative arrangements should be tightened up. (Rec. 26)

5. Our policies should be primarily production oriented. Even ceilings on land holdings should be considered on the same basis. Holdings which are contributing to high levels of production should not be disturbed. (Rec. 27)

6. Land ceilings act should be repealed and replaced by a provision for graduated taxes for the extent of land over and above the minimum prescribed. (Rec. 28)

7. Consolidation of the present scattered agricultural holdings should be expedited. Immediate measures are called to change the provisions of Inheritance Law to prevent further fragmentation of agricultural holdings. The legislative measures must be flexible enough to meet all contingencies, such as exchange of land etc. (Rec. 29)

8. The policy of building co-operative farming societies under Government pressure and State patronage should be given up.(Rec. 30)

9. Indiscriminate distribution of land to landless labourers unaccompanied by the necessary where-withal to enable them to cultivate these lands profitably, should be stopped forthwith. Our aim should be to diversify, intensify and industrialise agriculture as this will provide ample employment to landless labourers. (Rec. 31)

10. A National Standing Commission of experts should be appointed to undertake a national survey of potentialities for agricultural development for evolving land and water utilisation pattern. This pattern should take into consideration the potentialities available, the resources which need to be fully ex-ploited and other factors for extensive introduction of scientific farming. It should form the guide for the Central and State Governments to invest their resources to achieve the best results in agricultural production. This should also form a guide for consolidation of holdings. (Rec. 32)

11. A national water use policy must be evolved keeping in view the urgent necessity to exploit the irrigation potential fully and as quickly as possible and to ensure there is no injustice done to any State. The policy should provide for utilisation of irrigation water from surface resources or from underground resources depending upon the technical and economic feasibility. (Rec. 33).

12. Government waste lands should be leased out on a long term basis for individuals and organisation who come forward with capital resources and management techniques to develop these lands. Blocks of land with a minimum extent of 300 to 500 acres have to be leased out. Their production requirements including credit should be ensured since it contributes to increased agricultural production. There should, however, be no grants or subsidy. (Rec. 34).

13. The co-operative policy should be subjected to a thorough re-examination. Co-operatives should be allowed to stand the test of their efficiency in a competitive field. The protections given to the co-operatives so far, such as monopoly rights in regard to supply of inputs, and the subsidies and grants should be stopped. (Rec. 35)

14. Agricultural production should be the responsibility of Agricultural department. This demands a single line of command from village to State level. Panchayati Raj institutions should not be entrusted with agricultural administration. (Rec. 36).

15. The public sector undertakings should be completely autonomous and free from Government interference to enable them to operate strictly on business principles. Government control should be limited to the absolute minimum necessary to ensure safety of its investments. The Board of Directors should consist of men who are professionals and experienced in the various fields of activity which the undertaking is entrusted with. Government officials should not hold multiple directorship in a number of companies. (Rec. 37).

16. In view of the acute shortage of the various agricultural requisites the country is facing today, there should not be any monopoly given to any single organisation or agency in the fields of production and distribution of the various inputs and other requirements. Uniform treatment should be meted out to all organisations irrespective of whether they are in the public or private sector, as long as they operate efficiently, keep to the standards and do not exploit any section of society. (Rec. 38).

17. The taxation policy affecting farmers and the farming profession should be subjected to a thorough re-examination by an expert commission keeping in view the legal, constitutional, moral and social aspects, apart from the factors of equality of treatment among all sections of society. (Rec. 39)

18. Price support should be an instrument of State policy in order to ensure production of the required quantity of any crop at any moment when the State needs it. (Rec. 40)

19. The Agricultural Prices Commission should fix the minimum prices taking all factors into account, and in particular the following aspects :—

    (i) Interest on the cost of land;

    (ii) Interest on investment;

    (iii) Cost of production including managerial cost;

    (iv) Input costs, wages, taxes, cesses, depreciations, etc.

    (v) Intermediary losses owing to bad seasons, characteristics of the area and such other factors;

    (vi) Reasonable margin of profit as compared with other sectors (Rec. 41)

20. In fixing the prices, inter-crop parity should also be taken into consideration along with the average cost of production (Rec. 42)

Union-State Relationship in Agricultural Development

1. The Centre-State relationship in agricultural development, as it exists today is not conducive for the maximum utilisation of the potential for increasing agricultural production. Although, the

Centre is responsible only for high level policies and co-ordination, it has developed a vastly proliferated bureaucracy. This is due to its increasing concern in seeing to the implementation of the plans in the States. This is having adverse effect on the States initiative in drawing up and implementing realistic plans. (Rec. 43)

2. Central Government, in the agricultural field, should be concerned mainly with the formulation of national plans for agricultural production, developing a land and water utilisation pattern, dealing with international assistance and collaboration, foreign trade, etc. (Rec. 44)

3. The Funds for the plan scheme which are being operated under Article 282—discretionary powers— should be operated under Article 275—grants-in-aid. The terms of the next Finance Commission should cover these funds also. (Rec. 45)

4. A National Standing Commission of experts in agriculture and allied fields should be appointed to evolve land and water utilisation pattern for the country. This pattern should be the guide for the Centre and the State to use their resources to exploit potential fully. (Rec. 46).

5. The prevailing system of grants to the States from the Centre on an ad-hoc basis should be stopped. It should be replaced by low interest long term loans to the States. (Rec. 47)

6. A committee of experts at the Government of India level should be appointed to process the schemes from the States asking for loans. This Committee should advise the Government of India on the technical and economic feasibility of the schemes. (Rec. 48).

7. An evaluation cell should be attached to the Board for agricultural Development at the State level. This cell should not expand itself into a big organisation. It should make use of all other evaluation organisations already functioning both in the public and private sectors. (Rec. 49)

8. The Centre should refrain from entering into any field which is legitimately in the States jurisdiction. Accordingly, it should hand over immediately all the institutions concerned with agricultural research and education to the States, while retaining only the All-India Institutions. (Rec. 50)

9. All-India Corporations started by the Centre in the public sector should be replaced by the Agricultural Development Corporations in the States. This should not apply to the Food Corporation of India. (Rec. 51)

10. The States should review the existing institutions, develop a nationalised pattern, eliminate duplication and overlapping, strengthen the remaining with proper equipment, competent and well paid staff, and adequate resources. (Rec. 52)

11. To ensure maintenance of standards in agricultural research and training, the Central Government should set-up a National Accreditation Commission. (Rec. 53)

12. Memorandum of agreement should be introduced between the Central and State Government agencies in respect of projects which need their collaboration. (Rec. 54)

Machinery for Planning for Agricultural Development

1. The academic and theoretical exercises and projections by the Planning Commission are poorly reflected in performance. (Rec. 55)

2. Farmer's organisations should be encouraged from village level upwards, and should be represented on policy making bodies and actively involved in the process of planning. (Rec. 56)

3. A District Council for Agricultural Production should be set-up at the district level, and be made responsible for approving the district plan for agricultural development and to review the performance. (Rec. 57)

4. A State Board for agricultural development should be set-up at the State level. Its function should be to approve the State Plan for agricultural development and to review the performance (Rec. 58).

5. There should be an Expert Committee to advice the State Board on all matters coming up for consideration before it, including the plans for agricultural development. (Rec. 59)

6. The Planning Wings working in the different departments concerned with agricultural production should be merged together and a strong planning division should be set-up in the Department of Agricultural Development in the States (Rec. 60)

7. The Agricultural Division in the Planning Commission should be abolished forthwith as its continuance will only duplicate the work of the planning division in the Ministry of Agricultural Development. (Rec. 61)

8. There should be a small wing in the Ministry of Agricultural Development at the Centre for attending to the work relating to agricultural planning. (Rec. 62)

9. Co-operatives and the Panchayati Raj institutions should be represented on the bodies set up for consideration and approval of plans and policies. (Rec. 63)

10. Administrative procedures should be simplified a great deal. The amount of scriptory work-load involved in the planning process should be very much reduced. (Rec. 64)

11. A technical manpower utilisation branch should be attached to the planning divisions both in the Department of Agricultural Development in the States & in the Ministry of Agricultural Development at the Centre. (Rec. 65)

12. The machinery for agricultural intelligence should be re-organised from the village to national level. It should be integrated with the pattern of agricultural administrative agency we have suggested. It should be made responsible for collection and process of all the data required for planning and other functions. (Rec. 66)

Food Policy

1. The present food situation is more due to policies, and the administrative machinery than due to a mere shortfall in production alone. (Rec. 67)

2. The food policy has been more distribution oriented than production oriented. Although this may be a short term measure the tragedy is that it is having a severe setback on food production itself. (Rec. 68)

3. The large amounts of money which are being spent for importing foodgrains should have been utilised for stepping up indigenous production of fertilizers and to offer more remunerative support prices to farmers. That this has not been done all these years is a glaring mistake of our policy. (Rec. 69)

4. Instead of subsidising the cost of imported foodgrains, the amount should be utilised for providing higher remunerative prices for farmers. The imported foodgrains should be utilised for building up buffer stocks. (Rec. 70)

5. Aggressive open market purchases would help in procuring more foodgrains and this will also stimulate increased production. The subsidy, which is presently being given to undersell the imported foodgrains, should be utilised for meeting the differences between higher purchase price in different States and lower selling prices (Rec 71)

6. When the private trade can handle the food distribution at a nominal charge, the State Trading has imposed a heavy financial burden on the Government. The policy has neither been helping farmers. Both from the point of view of consumers and producers, efficiency in food trading has to be ensured. (Rec. 72)

7. Adequate steps should be taken to modernise and improve the handling capacity at the ports to receive quickly and transport the imported grains, and also to facilitate quick handling of exports. (Rec. 73)

8. All impediments in the way of food production should be removed forthwith, and positive incentives offered. Government should handle

the price mechanism to regulate production according to the needs. (Rec. 74)

9. Food production should be commercialised. Any crop which is produced for the market should be treated as a commercial crop. (Rec. 75)

10. The State zones should be abolished. The restrictions on movement of foodgrains between and within States should be removed. (Rec. 76)

11. We are not in favour of compulsory levy on producers as it exists now. It is ad-hoc and not based on any rationale. (Rec. 77)

12. A National Grain Reserve should be built up. The farmer being a very important citizen of this country has also to take care of the non-farmer. Therefore, he should be legitimately expected to make a small contribution towards building up of the national grain reserve. The reserve should be built up by the following methods :—
    (i) By entering into contract with farmers for purchase of foodgrains. This should be started in the surplus districts.
    (ii) Open market purchases in the surplus districts.
    (iii) Purchase of grains in exchange for fertilizers to be given to farmers at concessional price. A system of coupons should be introduced to facilitate this procedure to operate.
    (iv) Imports. (Rec. 78)

13. The problem of shortage of foodgrains should be handled not by choking the trade, but by freeing the market from the clutches and allowing it to operate under the principle of demand and supply. Government can influence the market by building up sizeable buffer stocks to stabilise prices. (Rec. 79)

14. Government should not engage itself in buying, movement and selling of foodgrains. This should be entrusted to the Food Corporation of India which should function as the agent of the Government. (Rec. 80).

15. The Food Departments both at the Centre and in the States should be reduced to the barest minimum. This would result in considerable savings which could be better utilised to offer more incentives to farmers. (Rec. 81)

16. Fertilizer allocations to the States should be made in exchange for the foodgrains assured to be supplied to the Central pool. (Rec. 82)

17. Food processing industries should be given all the help and financial assistance necessary for modernising and improving their efficiency. (Rec. 83)

18. The technical know-how available in the Central Food Technological Research Institute should be fully utilised both for modernization of the existing mills and the manufacture of modern mills. (Rec. 84)

19. The policy of assisting the conventional rice mills by Government and N.C.D.C. is not a healthy trend and should, therefore, be discontinued. (Rec. 85)

20. Scientific standards should be prescribed for mills, and licences should be given only to those mills which conform to the standards. (Rec. 86).

21. The restrictions that only imported wheat should be milled in the roller flour mills should be removed immediately. (Rec. 87)

22. The processing industries should be made upto-date in marketing of wheat products. The products should be well packed, subject to inspection as to their quality and grades, 'agmarked' and then marketed. (Rec. 88)

23. The Food Corporation of India should be allowed to function in a free economy as a balancing agent. It should have the least control by Government. The F.C.I. should function as a commercial organisation in charge of both the internal procurement and movement of foodgrains and handling of imported foodgrains. (Rec. 89)

24. Import-Export policy regarding agricultural commodities should be more realistic. It should be cheaper to import certain commodities like sugar. If exports are to be maintained and if agricultural commodities are to be available at cheaper prices, then the cost of production should be reduced. This is possible only by a suitable cropping pattern based on potentialities and suitable for higher productivity. (Rec. 90)

Co-operative Farming

1. The experience from the working of the large number of Co-operative Farming Societies in the country has clearly shown that these societies.—

    (i) have not substantially contributed to increased agricultural productivity;

    (ii) have not contributed to develop harmony and co-ordination among farmers;

    (iii) have resulted in the wastage of resources and efforts; and

    (iv) have contributed only to the proliferation of Government machinery. (Rec. 91)

2. The objectives of co-operative farming societies, namely, increasing agricultural production by pooling uneconomic holdings, has not been fulfilled. Experience from other countries like Japan has indicated that it is possible to modernise agriculture even with small holdings. (Rec. 92)

3. The policy of Government developing and fostering these societies with set targets and special patronage has not contributed to increasing the productivity nor has it done any good to farmers. (Rec. 93)

4. Starting of 10,000 new cooperative farming societies in the Fourth Plan period and the proposed allocation of Rs. 35 crores for this purpose should be dropped. (Rec. 94)

5. The existing 5,300 co-operative farming societies should be screened on the basis of their contribution to increased agricultural production. Only those societies which have substantially contributed to increased agricultural production need to retained and all the rest closed down, the lands distributed to the members who are cultivators. (Rec. 95)

6. Co-operative Farming Societies should not be given any special privileges either directly or indirectly. These societies should be able to stand on their own merit, making use of whatever facilities and help available from the Government for agricultural development in general. Where farmers come together and organise themselves for economic enterprises, they should be given priority consideration in meeting their requirements of seeds, fertilizers, implements, machinery credit, etc. (Rec. 96).

7. The administrative heirarchy which has been set-up for co-operative farming societies should be disbanded. (Rec. 97)

8. The problem of uneconomic holdings should be solved by diversifying and intensifying agriculture which will provide more employment. (Rec. 98)

Agricultural Finance

1. Lack of adequate and timely finances has been a major impediment in Indian agriculture. Caught in the vicious circle of low yields meagre economies, unproductive expenditure, property and debts farmers have not been able to mobilise the necessary capital for investment in productive enterprises. (Rec. 136)

2. A dynamic movement of social reforms is called for. If unproductive expenditure has to be reduced and the savings mobilized for investment in productive enterprises, it will quicken the pace of development. The lead in this should be given by others well placed in society and better educated than farmers. (Rec. 137)

3. Agricultural Development holds the key to economic growth. Since the savings and capital formation in agriculture are low, the resources have to be mobilised from all other sectors and channelled to the agricultural sector. Till such time farmers increase their income and save enough to invest in their agricultural productive enterprises, Government should provide the required capital and the flow of capital into the agricultural sector. Money lent to farmers for productive purposes would fight the forces of inflation. (Rec. 138)

4. The total credit requirements of farmers should be met. This should include their needs for production, marketing, processing, consumption and other domestic expenditure. Otherwise, farmers will be forced to divert the production loans to unproductive purposes and recourse to borrowing from the traditional money lenders. This will only aggravate their indebtedness. (Rec. 139)

5. The credit requirements of farmers as estimated by the Government of India are very inadequate. This calls for providing more incentives and creating a conducive infra-structure to enable all the banking agencies to take increasingly active role in lending credit to agricultural development. (Rec. 140)

6. The procedures for obtaining credit should be very much simplified. (Rec. 141)

7. If the farmers have to be saved from the grip of traditional money lenders, more efficient system of credit including marketing credit should be developed. The pace of progress of the organised banking sector should be quickened. (Rec. 142)

8. Government should not administer taccavi loans directly. It may use any of the existing banking agencies. (Rec. 143)

9. Agricultural Credit Corporations proposed to be started in some States should be dropped, and the existing financing agencies should be strengthened by removing their defects and deficiencies and giving them better support. (Rec. 144)

10. Judging from the experience gained so far, it is not possible for the co-operatives alone to meet the entire credit requirements of farmers. It is, therefore, necessary to harness the resources of all other agencies for increasing the availability of credit to farmers. To achieve this purpose, all the agencies engaged in this task should be treated on equal terms. There should be no discrimination among them in regard to privileges and facilities by Government. The necessary legislative and other conditions should improved for other agencies also to develop their resources. (Rec

11. The three tier structure of credit co-operatives should b
to two tiers. (Rec. 146)

12. Farmers' Co-operative Banks should be constituted by converting the existing large sized co-operative societies by merging non-viable units of primary cooperative societies. (Rec. 147)

13. There is no necessity to continue the Apex Banks, and hence this should be abolished. The District Central Banks should continue. In view of the Banking Resolutions Act being applied to co-operative banking, there is no necessity for an additional supervisory level at the State level. The part played by the Apex Bank should be taken over by the Reserve Bank of India. (Rec. 148)

14. The rate of interest charged to farmers should be reduced from the present 9% to 7½%. The Reserve Bank of India should set apart ½% in this to build a reserve to take care of the risk involved and also to effectively supervise the co-operative banking institutions. (Rec. 149)

15. Government should make an initial contribution of Rs. 1 lakh to each of the Farmers' Banks by way of capital resources—50% in the form of share capital and 50% in the form of long term loan repayable in 10 years. This should be in addition to the capital the Farmers' Banks bring to themselves by the merger of the societies. (Rec. 150)

16. The State Bank of India should utilise these Farmers' Banks instead of starting their own branches in rural areas. When the State Bank of India opens branches in villages, its losses during the first three years are subsidised by the Government. Instead of subsidising these State Bank branches, Government should strengthen the Farmers' Banks by utilising the same. (Rec. 151)

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17. There should not be any subsidy or contribution to managerial cost either to the Farmers' Banks or to other credit institutions. They should be run strictly on commercial lines and to stand on their own feet. (Rec. 152)

18. If the co-operatives are to be a success, their defects should be remedied with a strong will followed by firm decisions and actions. They should be able to stand against competition in the banking sector. Creation of competitive credit agencies will have a palliative effect on the working of the cooperatives. It will help farmers to have wide range of credit service to choose from. (Rec. 153)

19. Long term loans should be for land imporvement and taking into consideration the committed debts of farmers. The security for these loans should be the land and the assets created on the land. Credit card system suggested will simplify the procedures and enable the farmers to draw on their credit-worthiness whenever they need. The short term loans should be for production purposes only. (Rec. 154)

20. Since agro and agro-processing industries, commercial banks and co-operatives are to enter into the fields of agricultural credit to farmers, there should be suitable checks designed to prevent a farmer from getting finances from more than one source at the same time. The system of credit cards both for long term, medium term and short term loans will facilitate this. (Rec. 155)
21. The debentures raised by the land Development and other co-operative banks should be made more attractive by liberalising the conditions and by offering better incentives. (Rec. 156)
22. The restrictions imposed on rural debentures that they are non-transferable and non-mortgageable should be removed to make them more attractive. (Rec. 157)
23. The debentures which are now being raised for agricultural enterprises should be madé tax free. The interest rate on these should be raised to attract investment by farming classes. (Rec. 158)
24. Debentures should be made transferable to Government at par-value without loss. (Rec. 159).
25. Debentures raised by Land Development Banks,Agricultural Development Corporations, etc, meant for agricultural purposes should be made more attractive than the debentures raised by other agencies, such as, Electricity Board, etc. There should be provision for raising special land development debentures with ceilings on individual investment. This should be tax free and should be available on top just like National Savings Certificate. (Rec. 160)
26. Land Mortgage Banks should be able to raise loans from the L.I.C. pledging the records of people who have subscribed to the debentures. This can be done since debentures are raised with Government guarantee. Raising loans from L.I.C. should be subject to the consent of Government, just as in the case of Electricity Boards. (Rec 161)
27. All theses facilities should be available to debentures raised by Agiricultural Development Corporation also. (Rec. 162)
28. Working of land Mortgage Banks still involves complicated procedures, such as, elaborate enquiries, production of various documents, offering of adequate security etc. These are coming in the way of timely disbursement of loans. Steps should, therefore, be taken to see that no farmer is made to wait for more than a month from the date of application to get his loan sanctioned. Rules and regulations of the Land Mortgage Banks should be changed and simplified to be on the lines of the commercial banks. (Rec. 163)
29. If the land is mortgaged to the Land Mortgaged Bank or Land Development Bank, the farmer should be able to get additional accommodation whenever he wanted it for improving the land or for buying the equipment to instal on his land without going through all the procedures once again. The system of credit card we have suggested will help this. (Rec. 164)

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30. The Reserve Bank of India should play a more dynamic role in regard to agricultural credit. Its policy today is more recovery oriented than production oriented. It should treat all Banks which extend agricultural credit to farmers' on par. All banking institutions should be given the same treatment in respect of privileges, facilities, etc. There should be no discrimination on ideological or other grounds. The only basis should be whether an institution runs on strict banking principles or not. (Rec. 165)

31. The performance of the Agricultural Credit Department of the R.B.I. as well as that of other credit agencies should be judged by the amount borrowed and the number of farmers who have borrowed during a particular year and not by merely the quantum of credit advanced. (Rec. 166)

32. The R.B.I. should support commercial banks, and Agricultural Development Corporations by extending to them financial accommodation to the extent these institutions lend to farmers for agricultural development. This should become an accepted policy of the R.B.I. The R.B.I. should be responsible to make available the necessary financial resources for all these banking institutions keeping in view the total requirements of agricultural development including the development of agro and agro-processing industries, agricultural services of various types and credit to farmers long medium and short term. (Rec. 167)

33. All inhibiting factors in the case of commercial banks should be removed so that they can play a dynamic role in agricultural development by increasing their lending to agricultural enterprises. (Rec. 168)

34. A large section of farmers owning land of prescribed value should be linked with the local commercial banks for their long term farm credit requirements. (Rec. 169)

35. The Agricultural Debt Relief Act must be amended and relaxed in the case of commercial banks also. (Rec. 170)

36. Commercial banks should be able to advance loans to farmers through intermediaries such as, agro and agro-processing industries. (Rec. 171)

37. The Agricultural Refinance Corporation should advance and back up agricultural loans made by commercial banks. (Rec. 172)

38. Whenever commercial banks make direct advance for agricultural production, they should be given the concession of raising from the R.B.I. at the bank rate the amount so advanced by exempting them from the provisions of liquidity ratio. Government should guarantee loans issued by banks to agro and agro-processing industries and also to other agricultural enterprises. (Rec. 173)

39. The agency that looks after the financial interests of farmers should also provide technical assistance. The R.B.I. should provide the necessary funds by discounting facilities to the extent of direct finances made to agricultural production other than plantation produce. (Rec. 174)

40. It should be incumbent on the Life Insurance Corporation of India to channel at least such of its resources which it gets from rural areas. This should be through subscription to Special land Development Debentures to be raised by the Land Development Banks or agricultural Development Corporations. (Rec. 175)

41. The Food Corporation of India should be supported in providing credit and inputs to farmers in exchange for the grains to be sold by farmers to the Corporation. (Rec. 176)

42. Considerable savings should be effected by streamlining the administrative machinery on the lines we have suggested in this report and the savings invested in commercial enterprises. (Rec. 177)

Role of Farmers' Organisation in Stepping up Agricultural Production

1. Although agriculture constitutes the single largest economic enterprise in this country, it is handicapped by the lack of farmer's organisations, representing the different interests of farmers, and powerful enough to influence policies and programmes at the Government level. While all other sections of the society have been organising themselves for bringing pressure on Government to protect their interest, farmers are still largely unorganised. (Rec. 322).

2. The farmers' organisations which are presently working, rather mainly at higher levels, are not truly representatives of farmers in the villages. Moreover, they are dependent on Government finance for their activities with the result they have little freedom to operate and to influence Government policies affecting farmers and farming profession. (Rec. 323).

3. Co-operatives and Panchayati Raj institutions have not developed in this country as farmers' organisations. Vested interests have taken the co-operatives away from the actual needs and problems of the majority of farmers. Farmers do not have even a voice in the working of co-operatives Panchayati Raj institutions have developed parochial attitude, and their interests are mainly in regard to distribution of grants, subsidies, loans and scarce materials. Farmers' interests are largely ignored even here. (Rec. 324).

4. Farmers' organisation should be deliberetely encouraged from the village level upwards. These should be done not by giving financial

grants and subsidies, but by entrusting definite functions to these organisations at each level. (Rec. 325).

5. Farmers' organisation should be represented on the policy making bodies at their respective levels. (Rec. 326).

6. They should be free to undertake any specific project contributing to agricultural development and to obtain financial and technical assistance from Government on the same pattern which is available to any other organisation. (Rec. 327).

Improved Seeds

1. Quality seeds are a valuable asset for obtaining high yields of crops. The programme of production and distribution of quality seeds of improved varieties of crops, which was crystalised on the basis of concrete programme formulated by the Special Committee of the I.C.A.R. in 1958 has not been implemented effectively all over the country. Many defects have been noticed in this programme by the various committees which have studied this aspect. These defects have not been remedied with a strong will. Co-operatives have so far played very little part of this. Promotion of private seed industry is in confusion since Government also has been starting large State Seed Farms, besides a large number of block seed farms. (Rec. 215).

2. There is no necessity for the Central Varieties Release Committee and hence it should be abolished. The State varieties Release Committee should be set-up immediately in all the States. (Rec. 216).

3. Government should not directly engage itself in the production, distribution and marketing of seeds. Its business should be in promoting research work and in strengthening commercial agencies engaged in this task. (Rec. 217).

4. There should be a clear definition of duties and functions of the various agencies engaged in the production, distribution and marketing of improved varieties of seeds. While the Research Stations should make available adequate quantities of nucleus seeds, the actual production and distribution of seeds should be left to the seed industry, whether in the public or private sector, as long as they run on commercial lines. While the co-operatives may continue in this task, they should not be given any monopoly or social privileges or facilities. Panchayati Raj Institutions should not handle this job. (Rec. 218).

5. The State Departments of Agriculture should be responsible for certifying the quality of seeds entering into seed market, licensing the producers and distributors, implementation of Seed Act, and in general for promoting the growth of an efficient seed industry. (Rec. 219).

6. There are more than 4,000 block seed farms. They should be converted into Seed-*cum*-demonstration farms by providing them with the necessary financial and technical help and operational freedom, besides posting competent man to be in charge of these farms. It would be unwise to close down a large number of block seed farms already started. They should serve the purpose of effective demonstration. (Rec. 220).

7. Government should immediately stop going ahead with the establishment of large State Seed Farms. The Suratgarh Farm is already a sad experience to reveal, apart from heavy losses being incurred annually. The committed Soviet assistance should be utilised for more productive purposes and particularly for strengthening the seed industry, after negotiations with the Soviet Government. (Rec. 221).

8. There is no need either for the National Seed Corporation or for the State Seed Corporations. The Agricultural Development Corporations in the States should be able to promote the seed industry. (Rec. 222)

9. The Seed Act should be comprehensive as to include plant materials also. (Rec. 223).

10. The Seed Act should be reviewed in the light of the various recommendations made by us and suitable changes introduced. (Rec. 224).

11. Quarantine Service should be strengthened and all points of entry of plant and seed materials into the country should be covered by quarantine stations staffed by competent persons. (Rec. 225).

Fertilizers

1. Consumption of fertilizers in India is exceedingly low compared to either the world average or that of other developed countries. The low consumption is due to several factors, of which the high cost of fertilizers in this country and inadequate supply of fertilizers are two main reasons. (Rec. 226).

2. It is definitely a mistake for not having given due priority and emphasis for fertilizer production in the early years of our planning. At least now, all the concessions necessary for stimulating foreign collaboration and investment in starting fertilizer industries in this country should be offered. It is no use, placed as we are in a very critical situation, to continue to be swayed by ideological considerations as to the public sector undertakings. Further liberalising the concessions may even affect the public sector concerns. This is a price we should pay for. On the other hand, it is an opportunity for the public sector undertakings to improve their efficiency and survive in a competitive market or to vanish. (Rec. 227).

3. The cost of fertilizers should be brought down. This presupposes improving the efficiency of all the existing factories. The Fertilizer Corporation of India should give urgent consideration, design plants for manufacturing liquid ammonia and solid fertilizers making the full use of the latest techniques. Import duty on fertilizer equipment should be abolished at least for the time being. (Rec. 228).

4. Sales-tax, Municipal Tax, Excise Duty and other taxes levied on fertilizers should also be abolished. (Rec. 229).

5. The foreign exhange allocations required for import of fertilizers should be given priority over the import of foodgrains. It is necessary to enter into long term contracts with foreign producers to ensure steady supply of fertilizers. (Rec. 230).

6. Mechanisation of composting should be introduced effectively. Experience from countries like Holland and Germany should be utilised for this purpose. (Rec. 231).

7. The proposal to establish a Fertilizer Promotion Corporation at the Centre should be dropped. (Rec. 232).

8. Distribution and marketing of fertilizers should not be undertaken by the Agricultural Departments. It should be left to the fertilizer factories to develop their own wholesale and retail agencies for this purpose. (Rec. 233).

9. Fertilizer Factories should be facilitated and encouraged to take up distribution of fertilizers and other agricultural inputs on the same lines as petroleum and automoblile fuel are presently distributed, so that farmers may be able to get at one place all their agricultural requirements. (Rec. 234).

10. Fertilizer industries, their wholesalers and retailers should provide a part of their credit required by farmers to go in for fertilizers. The Agricultural Development Corporation should support the industries in rendering this service to farmers. (Rec. 235).

11. When co-operatives sanction production loans, it should be in production components. Coupons for various inputs should be issued so that farmers may get their inputs against the coupons either in the co-operatives or with any other retailers. This will avoid the inconvenience to farmers when there is no fertilizer in a particular agency. (Rec. 236).

12. The comprehensive Fertilizer Bill which is said to be under preparation should ensure that the distribution of sub-standard and spurious products is punishable. The bill should make provisions for farmers also to prosecute the culprits, whether they be distributors or manufacturers on the basis of the reports of chemical analysis of fertilizers. (Rec. 237).

13. The agricultural administrative agency should be strengthened to be able to have direct control on mal-practices in fertilizer quality and distribution. (Rec. 238).

Plant Protection

1. Plant protection in India demands top most consideration. Emphasis so far given to it is very meagre. Substantially more resources, therefore, should be mobilised to expand and strenghen the indigenous agricultural chemicals industry, and to encourage the growth of an effective field organisation for rendering the required services. (Rec. 239).

2. Local production of power operated plant protection equipment should be stepped up by providing to the firms with all incentives and facilities necessary, and by abolishing the system of licensing both for the establishment of new units as well as for the expansion of the existing units. (Rec. 240).

3. Government should not operate the aircrafts or as a matter of fact any other plant protection equipment for undertaking plant protection to service farmers. It should be left to the commercial organisations, whether in the public or private sector. (Rec. 241).

4. Foreign exchange requirements for the import of raw material and technical grades for the manufacture and formulation of pesticides and weedicides should be met in full. (Rec. 242).

5. The restrictions in regard to licensing system and export of a certain percentage of production as a condition, etc. imposed on the indigenous pesticides manufacturing industries should be removed (Rec. 243).

6. A high power committee at the All-India level should be appointed to screen the large number of pesticides and fungicides which are currently in the market, and to approve only the minimum number of chemicals keeping in view their cost and effectiveness. (Rec. 244).

7. All the 14 Central Plant Protection Stations now administered directly by the Directorate of P. P. Q. & S. in the Ministry of Food, Agriculture, C.D. and Co-operation should be handed over to the respective States. (Rec. 245).

8. The Directorate of P. P. Q. & S. as it is now, should be abolished. (Rec. 246).

9. The Ministry of Agricultural Development which we have proposed, should have a top level specialist supported by a minimum number of assistants in the Agricultural Production Division to look after

locust control, quarantine service, international obligations, national problems and policies and inter-state co-ordination. (Recm. No. 247).

10. The training-*cum*-field station for plant protection work located at Hyderabad and administered by the Directorate of P. P. Q. & S. should be closed and the functions taken over by the I.A.R.I. There is no necessity for an All-India Institute of Plant Protection proposed by the Working Group for the 4th Plan. (Recm. No. 248).

11. At the State level, the plant protection organisation should be integrated in the Department of Agricultural Development. Plant protection stations now operating in the various departments concerned with agricultural production should be brought together to work as a branch of the Division of Agricultural Supplies and Services in the proposed Department of Agricultural Development. (Recm. No. 249).

12. The Chief Plant Protection Officer at the State level should be technically trained in the plant protection work and should work in close collaboration with Agricultural University on the one hand and the Plant Protection equipment and chemicals manufacturing and distributing agencies on the other. (Recm. No. 250).

13. There is no need for a large number of Plant Protection Officer at lower levels since the commercial agencies should undertake distribution and marketing of equipments and chemicals and also rendering service on customs or hire basis. Only a few well-qualified and suitably trained staff at the District level will do. (Recm. No. 251).

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14. Panchayati Raj institutions should not be allowed to handle either the sales or the service operations connected with plant protection. Co-operatives should not be given any monopoly in this sphere. They may be used by the manufactures of equipments and chemical as their wholesalers or retailers. (Recm. No. 252).

15. The Directorate of P. P. Q. & S. need not undertake national surveys of storage structures and practices as this is being taken up by other agencies. The financial provisions proposed for this work should be dropped. (Recm. No. 253).

16. All steps should be taken to help farmers in constructing improved storage structures or in remodelling their existing structures. (Recm. No. 254).

17. National Rodent Eradication campaign should be organised on the lines of the National Malaria Eradication campaign. The Ministry of Agircultural Development should be in charge of this campaign. (Recm. No. 255)

18. Considering the magnitude of the problem involved in controlling rodents, we strongly suggest that suitable incentives should be offered for attracting private agencies to take up rodent control work on commercial basis. (Recm. No. 256)

19. The Pests & Diseases Acts in force in the States should be reviewed to provide for clear responsibility for Agricultural Development Department to act. (Recm. No. 257)

20. The Acts should be reviewed to ensure coverage of seed merchants, cold storages, nurseries, godowns etc. (Recm. No. 258)

21. The Insecticides Bill before the Parliament should be reviewed keeping in view the interest of chemical industries producing insecticides and fungicides. (Recm. No. 259)

22. Forecasting & Warning Service should be developed in the Department of Agricultural Development for rendering timely warning and service to farmer in combating the pests and disease attacks on their crops (Recm. No. 260)

Agricultural Implements & Machinery

1. The scope for intensification, diversification and industrialisation of Indian agriculture is so vast that there is ample justification for not standing in the way of mechanising Indian agriculture. (Recm. No. 261)

2. The progress so far made in regard to production and popularisation of improved agricultural implements and machinery, has not been satisfactory as judged from the results. (Recm. No. 262)

3. The various reviews and studies made in regard to this programme have revealed a number of defects and deficiencies in the programme. (Recm. No. 263)

4. Instead of removing these defects and deficiencies, Government has been taking upon itself the task of production and distribution of agricultural implements and machinery. With this in view, a number of schemes are being proposed. Instead of meeting the needs of the firms presently engaged in manufacture and distribution of implements and machinery, Government has been proposing to start a number of workshops in the public sector. Although it has been the Government's intention to bring down the prices of implements and machinery by directly undertaking their production, it has not been fulfilled due to inefficiency of public sector undertakings. On the other hand, this is discouraging the industries in the private sector which are already in the business. (Recm. No. 264)

5. Government's reponsibility in regard to production and popularisation of agricultural implements and machinery should be to promote research, testing, standardisation, production of prototypes, extending financial support, quality control, quality marking, demonstration and education. Government should confine to these activities. (Recm. No. 265)

6. Although the present licensed capacity for the production of power tillers and tractors is enough to meet the current demands, as estimated by the Planning Commission, Government has been trying to import large number of foreign tractors. This is having an adverse effect on the indigenous tractor industry. Besides, the public sector tractor manufacturing industry proposed to be started by the Government with foreign collaboration is superfluous and would not promote the growth of efficient tractor manufacturing industry. (Recm. No. 266)

7. Government should, therefore, not start the public sector factory for the manufacturing of power tillers and tractors. The Agricultural Implements Corporation proposed to be started at the national level is superfluous and hence should not be started. (Recm. No. 267)

8. The proposal to start the State level and Block Level workshops with an investment of Rs. 24 crores in the public sector should be dropped. Such of the workshops which are already established by Government should be converted into commercial enterprises and should not receive any subsidies from Government. (Recm. No. 268)

9. The proposed 15 Machinery-*cum*-Hire Stations with the aid of Russian Credit and equipment are also unnecessary and hence Government should not proceed with it. On the other hand, the existing firms should be strengthened by providing proper facilities. (Recm. No. 269)

10. The Agro-Industries Corporations which have been set up in 5 States and are proposed to be set up in the remaining States, should be changed into Agricultural Development Corporations by expanding their financial resources and by redefining their objectives and functions. (Recm. No. 270)

11. Government and the Agricultural Development Corporations should support the manufacturers and fabricators by offering guarantees to loans to be raised by them from the commercial banks etc. (Recm. No. 271)

12. Procedures for obtaining licences for import of equipments should be simplified. Steel should be supplied at cost price to small scale industries manufacturing agricultural implements and machinery. This facility is already being given to industries producing for export. Agricultural implements and machinery manufacturing industry deserves equal treatment. (Recm. No. 272)

13. Licensing system for the manufacture of these inputs should also be abolished forthwith to enable large number of firms manufacturing these inputs to come into existence so that prices can get established at a lower level in the competitive market. (Recm. No. 273)

14. Research in agricultural engineering should be strengthened. The corresponding division of the I.A.R.I. at the Centre and the Agricultural Universities in the States should play a prominent role in initiating and conducting research on various aspects of agricultural engineering. All aspects of research in agricultural engineering should be handed over to the Agricultural Universities. The 17 Research-*cum*-testing Units presently administered by the Ministry of F & A should be handed over to the Agricultural Universities in the States. (Recm. No. 274)

15. Government should not recommend any implement or machinery to farmers unless these are tested and ensured as to their suitability to local conditions, Supplies and spares as well as service facilities should also be ensured. (Recm. No. 275).

16. Standardisation of all improved agricultural implements and machinery should be expedited. The quality control, marking and inspection of agricultural implements and machinery is an urgent necessity. The required staff for this purpose in the district should work under the District Agricultural Development Officer. The 4th Plan scheme proposed for this purpose should be re-examined to be fitted into the district set up. (Recm. No. 276)

17. Manufacture and distribution of proto-types conforming to the standards prescribed in respect of agricultural implements, and machinery should be entrusted to the Agricultural Universities or established reliable firms. (Recm. No. 277).

18. All subsidies presently being given to farmers with a view to popularise agricultural implements and machinery should be discontinued. On the other hand, prices of agricultural implements and machinery should be brought down by promoting efficient working of the inputs manufacturing industries, and by abolishing sales-tax and other taxes on these. (Recm. No. 278).

19. Posts in the Agricultural Engineering Divisions should be filled up by qualified agricultural engineers. Those who are not qualified at present should be gradually replaced by qualified agricultural engineers. (Recm. No. 279).

20. The fear that engineers do not have employment opportunities is unfounded. They can start a number of enterprises and the scope is unlimited, particularly, in mechanising Indian agriculture. Government should provide all facilities and incentives for entrepreneurs to start industries manufacturing agricultural implement and machinery. (Recm. No. 280).

Organisation for development and utilisation of irrigation potential for agricultural production

1. Water is probably the most important limiting factor for agricultural production. Hardly 20% of the cropped area is irrigated at present. In view of the limited water resources available in the country, wisdom lies in making the best use of these resources. As an insurance against the frequent recurrence of droughts which the country is experiencing, the most highly potential areas should be exploited on top priority mobilising all the resources. (Recm. No. 185).

2. Financial allocations to irrigation projects should be increased by postponing for the present less urgent and unproductive projects. (Recm. No. 186).

3. Highly potential areas, such as, the Gangetic valley in the north and the deltaic area in the south should receive top most consideration. (Recm. No. 187).

4. While the policy should be to concentrate immediately on highly potential areas, in the other areas with less or meagre irrigation potential the policy should be to evolve a suitable agricultural pattern rather than investing large amounts without reference to the potential. (Recm. No. 188).

5. To ensure maximum utilisation of the irrigation potential created by irrigation projects, the entire command area should be treated as a block, and a high level coordination committee constituted· The Agricultural Development Corporation should be entrusted with functions such as levelling of land, etc. (Recm. No. 189).

6. The Central Water and Power Commission should confine itself to the examination of inter-valley and inter-State projects and such others which involve high technical competence. All small projects within the technical competence of the States must be dealt with by the States themselves. (Recm. No. 190).

7. The C. W. & P. C. should investigate the ways in which the water resources could be utilised most economically and advise the States. (Recm. No. 191).

8. The C. W. & P. C. should investigate the possibilities and methods to divert the west-flowing rivers by constructing dams and reversing their courses east-wards for better utilisation. (Recm. No. 192).

9. Utilisation of river waters, particularly of such rivers which flow through more than one State, has created bitter disputes among the States involved. The situation demands urgent consideration. (Recm. No. 193).

10. A National policy on Irrigation for the optimum utilisation of river water should be evolved. This policy should be discussed and accepted by the Parliament and implemented. (Recm. No. 194).

11. In accordance with the River Boards Act of 1956, a National River Board should be established for the purpose which the Parliament has assigned. (Recm. No. 195).

12. Irrigation should have first priority over water in preference to any other use. Accordingly, the potentiality for maximum irrigation should be the foremost consideration in designing of projects (Recm. No. 196).

13. The primary consideration for approval of irrigation projects should be its contribution to increased production. (Recm. No. 197).

14. The irrigation policy in highly potential areas should be production oriented and in less potential areas it should be protective oriented. In the other areas, with very little or meagre facilities for surface irrigation, investigation for underground water should be given the top most consideration. Technical and financial resources should be made available without any limit for this purpose. (Recm. No. 198).

15. Farmers should pay water charges on the basis of quantum of water they use and not on the basis of crops they raise. This calls for suitable realignment of fields receiving irrigation water. (Recm. No. 199).

16. All technical aspects of minor irrigation projects, whatever may be the extent of area served, should be the responsibility of the Irrigation Department in the States. (Recm. No. 200).

17. At the District level, the District Agricultural Development Officer should be the coordinating officer for all minor irrigation projects. (Recm. No. 201).

18. At the State level a division of irrigation under the Department of Agricultural Development should be created to attend to agricultural aspects of irrigation. (Recm. No. 202).

19. The Agricultural Development Corporation, which we have proposed, should promote, through any suitable field organisation, providing irrigation facilities complete with pump sets with electric connections to farmers on a package basis. (Recm. No. 203).

20. While we have no objection to any agency maintaining the minor irrigation works, we are particular that it should be technically well equipped with qualified and technical engineers and provided with adequate funds for maintenance. (Recm. No. 204).

21. The Exploratory Tube Wells Organisation should be transferred from the Ministry of Food & Agriculture to the Ministry of Irrigation & Power (Recm. No. 205).

22. The Ministry of Irrigation & Power should be the coordinating body for all the other departments involved in the investigation of underground water. (Recm. No. 206).

23. Minor irrigation should be redefined and treated as a package of services including sinking of wells, installation pump sets and provision of power supply. Rules and regulations for the use of minor irrigation potential must be relaxed and simplified. (Recm. No. 207).

24. The Electricity Boards should draw lines in river valleys and in potential areas irrespective of whether there is current demand by farmers there or not. This will prompt farmers to dig wells and to get electric connections for their pump sets. Any loss in this connection which the Electricity Board may incur should be made good by the Government. (Recm. No. 208).

25. The rates for electric energy supplied to agriclture should be brought down at least to be on par with that charged to large industries. (Recm. No. 209).

26. Collection of charges for electric energy sold to farmers for agricultural purposes should be once in 6 months or it should coincide with the harvesting periods. (Recm. No. 210).

27. River guaging and discharges stations should be administered by the State Irrigation Departments and not by the C. W. & P. C. (Recm. No. 211).

28. Both irrigation and drainage should be considered together in designing irrigation projects. The land development corporation proposed to be set-up by the Government of India is not necessary and hence Government should not proceed with it. The Agricultural Development Corporation would be far better in promoting the reclamation and development of waste lands as well as marshy and saline lands. (Recm. No. 212).

29. Extensive studies should be immediately initiated to find out cropping patterns which will produce optimum yields of crops making minimum demands on water. (Recm. No. 213).

30. Research and studies on dry farming should receive far more urgent consideration and should be supported by adequate financial resources. (Recm. No. 214).

Organisation for Agricultural Marketing

1. While an efficient and reliable marketing system by itself can stimulate increased agricultural production, lack of the same can reduce the impact of any number of production programmes. (Recm. No. 281).

2. The pace of progress in building up an efficient marketing system has not been satisfactory either in the coverage or in gaining the confidence of farmers. (Recm. No. 282).

3. The State Trading on foodgrains which the Government has undertaken during recent years has dislocated the normal trade channels in the country. Government should not engage itself in buying and selling agricultural commodities. In regard to the foodgrains the F.C.I. should act as the sole agent of Government. Regarding other commodities the normal trade channel should be allowed to operate, Government exercising control overthese to regulate the trade for the benefit of all sections of the community. (Recm. No. 283).

4. Government should concentrate on regulation of markets, enforcement of legal provisions, fixing support prices, fixing and inspecting standards and grades for agricultural products, fixing and inspecting weights and measures, conducting market surveys and intelligence, and extending market information for the benefit of producers, traders and consumers. (Recm. No. 284).

5. Cooperative marketing has not developed inspite of the support given to it. The volume of agricultural produce handled by cooperative marketing institutions is still very insignificant. They are not protecting the interests of farmers in ensuring the best possible prices for their produce. The defects in the cooperative marketing institutions have to be removed, and marketing operations conducted on a more realistic basis following business principles. (Recm. No. 285).

6. Cooperative Marketing Societies at the primary level should be called 'Farmers' Marketing Cooperative Societies. These societies should be given Rs. 1 lakh each of which 50% towards its share capital and the remaining 50% as loan repayable in 10 years. These societies should provide storage, grading and other facilities to farmers. (Recm. No. 286).

7. Farmers Banks (which we have recommended) should simplify the procedures and lend money against stocks in the godowns of farmers, provided these satisfy the conditions to be fixed by the banks. (Recm. No. 287).

8. Marketing Societies should issue certificates to farmers on the basis of produce brought into the societies. These certificates should be valid tender for the Farmers' Banks or commercial banks to advance loans to farmers. (Recm. No. 288).

9. Farmers should be able to get 30% of the current value of the produce when they bring it to the marketing societies and enter into a contract with them for sale of their produce. This advance should be interest free. They should be entitled to another 20% as advance with interest. The contract should be tenable for three months within which the farmers should be free to tell the marketing societies when to sell their produce. If the produce is disposed of at the instance of farmers during this period, he has to pay interest on all the advances he has taken. With a view to facilitate this practice, the Federation of Marketing Societies at the State level may fix

seasonal price at which the marketing societies can enter into contract with the farmers. The Federation of Marketing Societies, in turn, may enter into a contract with the F.C I. (Recm. No. 289).

10. In the alternative, farmers should have facilities to keep their produce with the societies for disposal at the best possible price and on advice by farmers. (Recm. No. 290).

11. Linking credit with marketing has not progressed much excepting in the case of agro-processing, industries. In view of this, all possible encouragement should be given to the existing agro-processing industries and to start new ones. Necessary financial assistance for extending credit to farmers and to build storage facilities should be ensured to these industries. (Recm. No 291).

12. Storage facilties should be developed at various levels including famers' level. Cold storage should be deliberately introduced in the rural areas. Preference should be given to farmers and their organisations in establishing these. Agricultural Development Corporation should promote the establishment and running of these cold storage. (Recm. No. 292).

13. Procedures for getting loans against warehouse receipts should be simplified. It should be incumbent on the Government and the F.C. I. to make use of warehouse facilities to the fullest extent. It is only after obtaining a certificate from the warehouses as to want of storage space; other accommodation should be arranged. (Recm. No. 293).

14. There should be complete coordination in the construction of new storage structures between the Government, the F.C.I. and the warehousing Corporations, to avoid unnecessary duplications. Preference should be given to farmers' level, market centres, and agro-processing industries in the construction of new warehouses. (Recm. No. 294).

15. Warehousing should be made an economic proposition to farmers. Its service charges are very high and should be reduced. (Recm. No. 295).

16. The National Cooperative Development Corporation should be immediately abolished as it is an unnecessary intermediary between the Government of India and the States. The resources of the Government of India should be made available to the Agricultural Development Corporations for promoting various interests in agricultural development on commercial lines. (Recm. No. 296).

17. The administrative organisation for agricultural marketing at the State level should be integrated with the Department of Agricultural Development. A Division of Agricultural Marketing under the Commissioner for Agricultural Development should be established. The Commissioner should be the Chief Marketing Officer. (Recm. No. 297).

18. The marketing staff in the district including those currently assigned for inspecting weights and measures should be under the District Agricultural Development Officer. (Recm. No. 298).

19. Most of the functions which the Directorate of Marketing and Inspection at the Government of India level are performing at present should be transferred to I.C.A.R. (Research) and the States. (Recm. No. 299).

20. Excepting the National Laboratories which should continue under the control of the Government of India, all regional and branch laboratories and office of the D.M.I. should be handed over to the States. In the Centre, the Division of Agricultural Marketing should deal with national surveys, fixing grades and standards for agricultural produce, inspection of export commodities, international problems and coordination among the States. (Recm. No. 300).

21. Fixing the standards and grades for agricultural produce should be the responsibility of the Division of Agricultural Marketing; there is no necessity for this function to be carried out by the other agencies, such as Indian Standards Institute, Export Inspection Council, etc. (Recm. No. 301).

Administration of Soil and Water Conservation Programme

1. Soil and water erosion has been cuasing a great deal of damage in the country, and this has been one of the major factors impeding our efforts to raise agricultural productivity in India. (Recm. No. 328).

2. Efforts so far made to check soil and water erosion in the country are not at all adequate compared with the magnitude of the problem. At this rate, it may take another 20 to 25 years before the entire country is convered with soil and water conservation measures, that too not in an intensive way. In view of the importance of soil and water conservation to increase the productivity of land, it is of paramount importance that top most priority should be given to this. (Recm. No. 329).

3. The present practice of the different agencies conducting soil surveys in accordance with their own methods should be discontinud, as it amounts to wastage of resources. Soil surveys should be standardised. The Centre should evolve and prescribe the standard pattern for conducting surveys. The Centre should not engage iteself in conducting surveys, but should leave it to the States. A small technical review committee should be constituted at the Centre and this should review the soil survey work undertaken in the States, in respect of river basins extending beyond a State, a special board may be constituted for this purpose. (Recm. No. 330)

4. Soil and water conservation should be taken up in a comprehensive way including all the measures recommended, and taking, a river basin or a watershed as a unit. The present policy of taking, up the several measures as separate scheme should be discontinued, as it amounts to wastage of resources without bringing commensurate results. (Recm. 331).

5. The soil and water conservation administration in the States, which is presently split up into a separate departments, should be integrated and brought under the direct control of the Department of Agricultural Development. (Recm. No. 332).

6. The Division of Soil and Water Conservation in the Ministry of Agriculture at the Centre should be reorganised, after transferring all research work to the I.C.A.R., the 9 Research-*cnm*-Training stations. to the concerned States for being administered by the Agricultural Universities, and the other aspects to the States. (Recm. No. 333).

7. Soil science division of the I.A.R.I. should be recognised , srengthened and developed as a Soil Institute. (Recm. No. 334).

8. The Agricultural Departments in the States should not administer the non-technical aspects of soil conservation. They should confine to preparation of plans and estimates, supervising the implementation of projects, and giving technical guidance to the implementing agencies and farmers. (Recm. No. 335).

9. The actual work of implementing soil and water conservation measures should be left to commercial agencies. (Recm. No. 336).

10. The financial resources available to these programmes should be increased to ensure that comprehensive soil and water conservation measures are undertaken throughout the country within the next 10 to 15 years at the most. (Recm. No. 337).

11. The existing legislative measures should be reviewed with a view to simplify the procedures and to provide for a definite role to the local farmers' orgnaisations which should be actively involved in implementing soil and water conservation programmes. (Recm. No 338).

12. Research agencies at the National and State levels should be equipped with adequate financial resources and competent staff to concentrate more on soil and water conservation measures in rain fed and water logged areas. (Recm. No. 339).

Organisation for Live-Stock Development

1. Live-stock development in this country has not received its due attention all these years. Instead of suppliers of food our cattle have been a source of drain on the meagre food supplies in the country. We do not have a rational food policy, neither a feed

grain policy. While the cattle at home are starving, cattle feed is exported. While large quantities of milk powder and milk products are imported the dairy milk projects are allowed to run inefficiently incurring heavy loss and without working to their full capacity. Cow in India has become more a sentimental problem than an economic one. (Recm. No. 340).

2. The organisation for live-stock development has been 'Veterinary dominated' and 'disease control' oriented. It is an independent department working in isolation of other departments concerned with agricultural production. This has led to a number of uncoordinated efforts with wastage of financial and technical resources. (Recm. No. 341).

3. The organisation for live-stock development should be integrated in the Agricultural Development Department proposed. The Veterinary section should be separated and the Animal Husbandry section should be integrated with the Agricultural Development staff. The District Agricultural Development Officer should be in overall charge of the live-stock development in the district. (Recm. No. 342).

4. The Animal Husbandry Division in the Ministry of Food and Agriculture should be abolished by transferring all the research schemes to the I.C.A.R. and Agricultural Universities, and by handing over most of its functions to the States. Only high level experts in Animal Husbandry should be attached to the Production Division of the Ministry of Agricultural Development. (Recm. No. 343).

5. Schematic approach to live-stock development should be done away with immediately as it amounts to duplication and wastage of funds and manpower. The funds proposed for the various schemes in the Fourth Plan which amount to Rs. 164 crores should be better utilised by transferring the funds for research to I.C.A.R. and the funds for development to stimulate live-stock industry through the Agricultural Development Corporations in the States. (Recm. No. 344).

6. Most of the schemes which are being run by semi-government organisations, associations and councils, should be dealt with directly by the Government. These organisations should play only a promotional role, and should not administer the schemes. (Recm. No. 345)

7. There should be definite feed grain policy in the country. Export of cattle feed should be banned. (Recm. No. 346).

8. The live-stock industry should be stimulated all over the country, and all encouragement and facilities should be given for starting and managing these industries on commercial lines, without discrimination among the public, cooperative or public sectors. (Recm. No. 347).

9. There is no necessity for the All-India Fishery Development Corporation. At best it can continue as a corporation for handling and processing of fish, and there should not be any Government subsidy or grants. (Recm. No. 348).

10. Instead of handling fishery development programme in a haphazard manner, we should allow fishery industry to gain momentum by providing it with suitable incentives. There is great scope for private enterprises in regard to production, transporting and marketing of fish and fish products. These should be promoted. Government should confine itself to research and extension work in regard to fishery development leaving the rest to industries and commercial organisations. (Recm. No. 349).

11. Fishery Extension work being carried out by the Government of India agency should be handed over to the States immediately. (Recm. No. 350).

Role of Agro and Agro-Processing Industries in Agricultural Development—Vertical Integration of Agriculture

1. The problem of large number of uneconomic holdings in India can be solved by vertical integration and not by horizontal integration. Experience has confirmed this. (Recm. No. 302).

2. Vertical integration of Indian agriculture implies linking farmers with agro and agro processing industries in respect of their requirements, such as credit, inputs, marketing and processing, and in turn farmers supplying their agricultural produce to those industries. This is a symbiotic relationship between the farmers and these industries for their mutual advantage and prosperity. (Recm. No. 303).

3. Large number of agro and agro-processing industries should be started in rural areas and linked up with farmers. If a sizeable segment of Indian agriculture is organised in the vertical integration pattern, Government will be relieved of many of the functions which it now performs, rather poorly, Government will be left free to concentrate on its legitimate activities and responsibilities. (Recm. No. 304).

4. Where sugar factories are not working profitably, our efforts should be to increase the productivity of land, through research, and to improve the efficiency of the sugar factories. (Recm. No. 305).

5. Experience in the working of a large number of Dairy Milk projects has clearly shown that unless these enterprises are run on business principles, it is not possible either to stimulate milk production in the rural areas or to ensure quality milk supply at reasonable price to consumers. Government should not run Dairy

Milk projects directly. All the Dairy Milk projects which are now being run by Government should be converted into commercial enterprises in the public sector, or in the private sector with Government participation in the capital. The Board of Directors should have men with sufficient experience in trade and business, particularly in regard to milk and milk products trade. (Recm. No. 306).

6. Government should stop all subsidies to the Dairy Milk projects. Government deputed officials working in these projects should be replaced by commercially trained personnel. (Recm. No. 307).

7. The experience of Kaira District Cooperative Milk Producers Union should be gainfully utilised in managing the Dairy Milk projects. (Recm. No. 308).

8. The artificial low price of liquid milk should be increased to remunerative level and the profit from the project should be used in increasing the milk production in the area. (Recm. No. 309).

9. Rice and wheat flour mills should be modernised and cleaning and drying units should be added on to these. (Recm. No. 310).

10. Rice, wheat and their products from [these units should be properly packed and sold after quality control inspection to avoid adulteration by merchants and traders. (Recm. No. 311).

11. The mills should be assisted with adequate financial facilities for construction of scientific storage capacity and to advance money to farmers against their stored produce. (Recm. No. 312).

12. Mills should act as milling agents for farmers and merchants. Commercial Banks and other credit agencies should not finance, merchants, but should advance money to those mills who in turn will advance to farmers. (Recm. No. 313).

13. Government should play a more effective role in protecting the interests of both the farmers and mills in respect of vegetable oil industry. Mills should not be allowed to act as traders, but they should function as processers mainly. (Recm. No. 314).

14. All encouragement and facilities including financial support should be given to entreprenuers to start food processing industry in large numbers in the country. (Recm. No. 315).

15. Financial resources which are now being spent on programmes like Applied Nutrition Programme and the several schemes in the Horticulture Department should be mobilised and used for helping entrepreneurs in starting a large number of fruit and vegetable

industries in rural areas. This can provide a more powerful stimulus to increase fruit and vegetable production than by spending any amount of money on the extension of Horticulture Departments. (Recm. No. 316).

16. Development of fisheries should be stimulated by linking fishermen with fish processing industries in regard to supply of equipment, credit and other facilities. (Recm. No. 317).

17. Fish processing industries should be well dispersed throughout the country to cater to the different urban centres without recourse to too much of transportation. (Recm. No. 318).

18. Government should encourage or set up on its own the input industries supplying the raw materials for agricultural input industries; for example supply of steel for the manufacture of agriculture implements. etc. (Recm. No. 319).

19. Government must provide the foreign exchange necessary for setting up of these industries and for their maintenance imports etc. (Recm. No. 320).

20. The Department of Agricultural Development should play a vital role in protecting the interests of both the farmers and consumers, regulating the relationship between the processing industries, farmers and consumers. (Recm. No. 321).

Agricultural Development Corporations for each State

1. The requirements of agricultural development in this country are of such magnitude that we have not been able to meet even a small part of this in spite of Government's efforts all these years. Public Sector undertakings and corporatives have not been able to cater to the needs of farmers in regard to their production requisites. (Recm. No. 178).

2. National level corporations for agricultural enterprises have not been of much help in stimulating the production and distribution of agricultural inputs. On the other hand, they have only proliferated national level organisations without stimulating the initiative and competence at the operational levels, namely, the State. Hence all the national level corporations engaged in agricultural development excepting the Food Corporation of India should be abolished. (Recm. No. 179).

3. The agro-industries coporations recently started in some of the States are not suitable for the purpose of promoting the production, distribution and marketing of agricultural inputs and for rendering various services to farmrs. They should be reorganised and expanded, and their terms of reference changed to fit in to the new proposal we are making herewith. (Recm. No. 180).

4. Each State should have a Development Corporation for promoting and supporting the agencies currently engaged or to be set up in the fields of production, distribution and marketing of agricultural inputs and in extending the various services to farmers. This corporation should not displace any organisation. It should not compete with any of the field agencies. Its responsibility is mainly promotional. (Recm. No. 181).

5. The Agricultural Development Corporation should be completely autonomous. Its operations should be purely commercial. Government control should be absolutely minimum. (Recm. No. 182).

6. The Agricultural Development Corporation should undertake the promotion of three major fields of activities, namely, Land Development, Supplies & Services, and Development of Agro & Agro-Processing Industries. This it should take up by extending financial support to the agencies engaged on the field for these activities. (Recm. No. 183).

7. The capital of the Agricultural Development Corporation should come from Central and State Governments, Reserve Bank, Commercial Banks and Agricultural Refinance Corporation. Besides, the Corporations may also issue debentures guaranteed by Government. These Corporations should have at least Rs. 10 crores as their initial capital. (Recm. No. 184).

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CHAPTER VI

FISHERIES PROGRAMME

Introduction

Agriculture is the most important industry in India. It contributes nearly 50% to the national income. This includes agriculture, animal husbandry, fisheries and forests. While the national income through agriculture and animal husbandry is Rs. 10,155 corres, forestry contributes Rs. 253 crores and fisheries Rs. 108 crores respectively at an index of prices prevailing in 1964-65. Thus fisheries occupies the lowest place in the total national income derived from agriculture despite the fact that it has vast potentiality which lies unexplored.

So far as agriculture is concerned, out of total of 811 million acres of total land available 350 million acres which represent a little more than one-third of the total area. This comprises almost the entire cultivable land available in the country. Therefore, it can be said that so far as land available for agriculture is concerned, it has reached its limit. In spite of new science and technology that has come into the field of agriculture through improved seeds, fertilizers, pesticides, irrigation, it would be difficult to meet the food needs of the growing population of India, by development of land alone. The experience of the last 15 years bears this out.

Therefore it is very necessary that for providing food to the growing population of India sources other than land will have to be developed and exploited efficiently. Fisheries offer an excellent source for the purposes of production of additional food.

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Administration

The fisheries Division in the Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture) is under the overall charge of a Joint Secretary who is assisted by Joint Commissioner (fisheries). The Division is concerned at the departmental level with policies and programmes of fisheries, fisheries engineering, fish processing and preservation, fisheries education and fish trade. Research on fisheries has been transferred to the I.C.A.R. w.e.f. 1-10-1967. The Estimates Committees in their 43rd Report (fourth Lok Sabha) have remarked...."The Committee feel that having regard to the scale of development envisaged, the importance of increasing indigenous consumption of fish, the stakes involved in the development programme from the angle of foreign exchange earnings, the potentialities of increasing the earning capacity of millions of fishermen throughout the country and thereby making a considerable impact on national income and rural prosperity, the increased employment potential and the need for the reorganisation of financial, technical, industrial and marketing resources, it is essential to provide a coordinated direction of the entire programme from the Centre. It is also essential that quick decisions are followed by implementation and utilisation of available resources and that the entire organisational and administrative set-up is geared to this pressing need. Viewed from this angle, the committee welcome the reorganisation of the Fisheries Division of the Ministry. They hope it would now be possible for the Ministry to formulate and execute schemes with greater expedition than here to fore. They also hope that the Fisheries Division of the Ministry would serve as a model for the States to emulate. The committee would, however, like to emphasise that fisheries service being technical, some degree of expertise is called for. It is necessary that the Senior Administrative Officers, who are required to direct and formulate policies, should remain in the Fisheries Wing for a certain number of years and are not frequently transferred.

The Committee feel that developmental work has to move in step with research, which aspect is now being looked after by the Indian Council of Agricultural Research. They cannot over-emphasise the importance of maintaining a close liaison with the Council so that research and development work may progress in Union. The committee hope that the Ministry will keep a continuous watch over the functioning of the Fisheries Division and assess its working periodically in terms of results achieved.

. The Committee feel unhappy to note that during the Third Plan period insufficient organisation in the Directorate of Fisheries has been responsible to a great extent for the shortfall in the expenditure. This has been admitted by the Ministry themselves. The Committee hope that the Ministry will persuade the State Government concerned to implement the recommendations for the reorganisation of the State Directorates at an early date.

The Estimates committee has also observed that the Central Board of Fisheries, as constituted is an unwidely body which it is difficult to make a thorough and technical examination of a problem and has suggested that steps should be taken to reconstitute the Board with separate technical Committees under its aegis consisting of representatives of the industry, exporters as well as Central and State Government Departments dealing with fisheries. It was also felt that the Ministry should coordinate all the development work and ensure supply of equipment like marine diesel engines, etc.

Research, Education and Training

Research in fisheries in this country is of very recent origin. Most of the institutes have been developed only after 1947 and they are very small, ill-equipped, inadequately staffed; with the result that the impact of research on the fisheries production and fisheries processing industries has been very meagre. We have not been able to provide trained personnel of high calibre through existing training programmes as constituted at present in this important industry. The programmes for training, education and research, therefore, have to be geared and expanded considerably if fisheries resources are to be fully utilised and a sound foundation for fishery industry is to be laid.

There are seven Central Research institutes under the administrative control of the Fisheries Division in the Department of Agriculture. These are:

(1) Central Institute of Fisheries Technology, Ernakulam.
(2) Central Inland Fisheries Research Institute, Barrackpore.
(3) Central Marine Fisheries Research Institute, Mandapam Camp.
(4) Central Institute of Fisheries Operatives, Ernakulam.
(5) Central Institute of Fisheries Education, Bombay.
(6) Deep Sea and Off-shore Fisheries Organisation.
(7) Indo-Norwegian Project, Ernakulam.

Of these the first three have now been transferred to the Indian Council of Agricultural Research. The working of these institutes was recently examined by the Estimates Committees of the Parliament and their observations together with other details are given below :

(1) *Central Institute of Fisheries Technology, Ernakulam*

Objects : The Institute was set-up in 1957 in view of the pressing need for coordinating research in various aspects of fish technology and for overall development of fish industry in India.

ESTIMATES COMMITTEE'S OBSERVATIONS

1. The Committee realise the importance of an institute devoted to fisheries technology for the proper exploitation of the Fishery resources not only for providing protein food to the people but also for augmenting the exports of fisheries products so as to earn valuable foreign exchange. Viewed in this context, the establishment of the Central Institute of Fisheries Technology can be considered to be a land-mark in the development of fisheries in the country. The Committee note that no project Report was prepared and published prior to the establishment of the Institute. They need hardly emphasise the desirability of preparing comprehensive project reports before any Institute of this magnitude is set up. Unless this is done, there is every likelihood of uncoordinated growth and development of various wings of the Institute resulting in lop-sided development of the entire Institute.

2. The Committee note the achievements of the Central Institute of Fisheries Technology. They, however, feel that the impact of such an Institute should be judged by taking into consideration the increase in catches of fish by application of better and cheaper techniques, craft and gear, reduction in wastage by better and developed methods of storage, transport and preservation of landed fish and by examining to what extent the research conducted by the Institute has resulted in the utilisation of cheaper and easily available indigenous materials which could be used even by the por fishermen or their associations. From this point of view, the Committee feel that there is a real need for undertaking a survey to assess the impact of the researches undertaken by the Institute for the exploitation of fishery resources and for raising the socio-economic status of fishermen. The Committee suggest that the Ministry may devise a suitable methodology for conducting such a survey at an early date.

3. The Committee would also stress the need for export-oriented research in the various investigations with regard to the production of quality items having consumer and market preferences. The Committee hope, the Institute would keep these objectives in view while drawing up research projects.

4. The Committee find the composition of the Research Committee that there are no representatives from fishery industry on it. Modern fisheries is as much an industry as a social welfare activity. The Committee, therefore, need hardly stress the desirability of having one or two representatives of fishery industry on the Research Committee so that they may make useful contribution to the deliberations of the Committee for the development of fishery industry in the country.

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5. The Committee do not know whether the Indian Council of Agricultural Research to which the Institute has now been transferred woud like to be guided by the advice of the Standing Research Committee of the Ministry in matters relating to Fisheries technology. In any case, the Committee would like to be assured that the technological research would continue to receive the closest attention it deserves and that efforts would be made to avoid duplication and overlapping in the field of technological research being done by various Central and State Institutes as well as by the Industry.

6. The Committee regret to note that some of the research programmes could not be completed within the stipulated time and successful execution of projects was hampered by delay in supply of materials, equipment, etc.

7. The Committee are of the view that the completion of research programmes within the stipulated time is a proof that the research has been conducted smoothly and economically. They would

therefore, stress that as proposed by the Institute, the research should be organised projects-wise with definite objectives and time-limits for completion laid down. For this purpose a comprehensive list of the pre-requisites necessary for a particular research programme should be drawn up and arranged in time so as to avoid any difficulties later on. It is also desirable that the economics of the projects are worked out as far as possible, both on the short-term and long-term basis, before they are taken up.

The Committee trust that the Indian Council of Agricultural Research, to which the Institute has been transferred would take suitable measures to remove the difficulties in the way of successful execution of projects.

8. The Committee note that at the meeting of the Fisheries Research Committee held at Madras in October-November, 1966, members referred to the increasing cost of mechanised fishing boats and impressed on the imperative need for effecting reduction on construction costs. The use of cheaper boat building timber, marine playwood, galvanised iron fastening, etc., were suggested. It was recommended that information available with the States might be passed on to the Director of the Institute, who would undertake basic studies in the matter.

9. The Committee need hardly point out that one of the aims of the researches being made in the Institute should be to reduce the cost of the mechanised fishing boats so that the poor fishermen could afford to purchase them and take advantage therefrom. The Committee do not think that there has been any appreciable decrease in the over-all cost of production of a mechanised fishing boat because, whereas the cost of production of the hull has gone down, the cost of the engine has gone up. They expect that all-out efforts will be made on the basis of further investigations, to reduce the overall cost of production of a mechanised fishing boat to the extent possible.

10. The Committee note that there have been complaints about the wooden boats whose hulls were being sheathed with magnesium aluminium alloy in place of copper, as suggested by the Institute. They would therefore like the Institute to examine carefully the performance of the boats in Madras and Kerala after the sheathing is done under the supervision of the Institute, before a final conclusion is drawn about the new sheathing.

11. The Committee are glad to note the researches made for evolving suitable and cheap gear by the Central Institute of Fisheries Technology. They suggest that concerted steps may be taken to acquient the users and the industry with the processes developed by the Institute so that there may be a growing demand for indigeneously manufactured gear materials and dependence on imports

may be avoided. As regards nylon twines, the Committee suggest that the Ministry may consider whether it could not be made incumbent on the new units manufacturing synthetic fibres to produce a certain amount of fishing in twine as well, as and when there is a demand for the same.

12. The Committee are not sure whether the Institute which has already eight vessels of sizes varying from 30 ft. to 50 ft. should require a bigger vessel. They feel that it should be possible for the Institute to make use of the vessels available with the Deep Sea Fishing Station, Bombay. They hope that the Indian Council of Agricultural Research will examine the Institute's request in the context of their needs and the resources position of the Government at present.

13. The Committee would like to emphasise that more and more persons from the fishery industry, which is mostly concentrated at Ernakulam, Cochin, should be encouraged to come to the Institute to participate in the special training courses. They need hardly point out that this will have two-fold advantages. First, a close liaison will be maintained with the fishery industry in as much as candidates sponsored by them will be receiving training in the Institute and secondly, the Institute will be able to gear up its research programmes according to the needs of the fishery industry.

14. The Committee feel that the progress made by various States in implementing the recommendation of the Central Board of Fisheries (made in October, 1966) for setting up pilot plants for dehydration of fish on the specification supplied by the Central Institute of Fisheries Technology is not satisfactory. The Committee would like the Institute to pursue the matter vigorously.

15. The Committee are glad to note that some by-products have been evolved by the Institute. They have no doubt that further research in the matter will yield encouraging results and cover more items. The Committee consider that fish protein concentrate has immense possibilities for supplementing the dietary needs to the underfed and the under nourished sections of population in the country. There is, therefore, a need for intensification of researches on FPC so that a product of the right quality acceptable to nutrition experts could be evolved. The Committee hope that the Institute will take advantage of the researches already undertaken in the United States in the preparation of an edible fish protein concentrate. They suggest that the progress made on this project may be included in the Annual Report of the Institute.

The Committee would also like to stress that unless the by-products evolved by the Institute are commercially exploited, research alone in the matter will not serve any useful purpose. They hope that concerted steps would be taken to attract the industry to commercially exploit the by-products evolved by the Institute. They also suggest that the feasibility of taking out patents on the by-products evolved by the Institute before releasing the same to the industry and charging royalty thereon from the industry may be considered.

16. The Committee note the exploratory and experimental work undertaken by the Mobile Unit of the Institute during each of the last three years. They, however, feel that the Institute should maintain close liaison with the State Department of Fisheries with a view to find out to what extent follow-up action has been initiated on the suggestions made by the Unit. The details of experiments conducted by the Unit and the results achieved should be published and made available to State Departments of Fisheries, Fisheries Research Institute and the industry.

17. While agreeing that unless the building is ready there cannot be a proper pilot plant laboratory, the Committee would like to stress that, if steps are not taken to equip the laboratory with essential and important equipments, to the extent possible, under the existing conditions, the work of the scientists will suffer thus retarding the progress of the pilot plant laboratory. They hope that early action with regard to this matter as also the building will be taken.

18. The Committee note that by and large close liaison and coordination is being maintained by the Institute with State Fisheries Department, technological stations, etc. There is, however, imperative need to intensify the efforts in this direction so that any inadvertent duplication of research work may be avoided from the very outset of the operation of any scheme. The Committee have no doubt that the Indian Council of Agricultural Research will examine this problem in all its aspects and decide whether the coordination of fisheries by the Fishery Research Committee is adequate or whether some other suitable machinery should be devised through which closer coordination and liaison could be maintained. The Committee would like the Council also to examine the possibility of forging intimate links between Central Institute of Fisheries Technology on the one hand and the Central Food Technological Research Institute and the Defence Food Research laboratory on the other. The Committee, in this connection, would also like to draw the attention of the Government to the recommendation contained in their Thirty-sixth Report (Fourth Lok Sabha) on the Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture)—Central Marine Fisheries Research Institute, Mandapam Camp.

19. The Committee would like the idea of constituting an informal consultative committee with representatives of the Ministry and the Institute to advise on the research activities of the Institute to be pursued vigorously by the Indian Council of Agricultural Research.

They have no doubt that the information consultative committee, if set-up, can help a great deal in making the research industry-oriented and thus bringing in quicker results.

20. The Committee need hardly point out that collection of useful information without disseminating it to the users quickly serve no purpose. They regret to note that there has been delay in getting the newsletters, booklets, leaflets and other reports published. They suggest that the question of expeditious publication of the extension publications may be considered.

21. The Committee apprehend that deputing the research staff of the sub-stations and Units of the Institute for doing demonstration work may interfere with the research work being done by them. They suggest that suitable ways may be devised in order to enable the extension, information and Statistical Wing to perform its functions smoothly and efficiently, especially in view of the fact that this is the only extension wing attached to a Central Fisheries Institute.

22. The Committee feel that the demonstrations can go a long way in bringing home in a visual form the results achieved by the Institute to industry as well as fishermen. They regret to note that there has been a decrease in the number of demonstrations being arranged in the number of demonstration by the Institute from the results achieved by the Institute. The Committee desire that the requirements for adequate demonstration work may be kept in view.

23. The Committee stress the need for periodical evaluation of the work of the Institute by an Achievement Audit Committee consisting of specialists. In this connection, the Committee would like to invite the attention of the Ministry to the recommendation made by them in para 9 of their 76th Report (Third Lok Sabha) on the Ministry of Food and Agriculture (Department of Agriculture)—Indian Agricultural Research Institute.

24. The Committee note that the Pre-Shipment Inspection Scheme is being operated by the Central Institute of Fisheries Technology in view of the highly complicated nature of fish inspection and in view of the fact that this has been endorsed by the Industry as well as by the Marine Products Export Promotion Council. The Committee feel that this is the legitimate function of the Ministry of Commerce. Now that the Institute has gone under the control of the Indian Council of Agricultural Research, the Committee suggest that the question whether the operation of this scheme should remain with the Institute or go to the Ministry of Commerce or any other Agency of the Ministry of Commerce may be examined in all its remifications and early decision taken in the matter.

25. The Committee need hardly point out that the pre-shipment Inspection Scheme can serve a very useful purpose in bringing about quality conciousness among the importers of sea food products. They, however, note that there have been quite a few cases since the introduction of the Scheme wherein the goods were detained by the importing countries even after they had been inspected and certificates issued. In one case the products decomposed owing to delay in loading after having been passed for export. In the circumstances, the Committee cannot but conclude that there is much scope for improvement in the working of the scheme especially in regard to those aspects which have come to notice in the past.

26. The Committee would also urge that demonstrations on improved methods of cleaning of fishing boat decks, fish holds, etc. and of processing, chlorination of water and cleaning of the premises should be regularly arranged in factories in increasing number to stress upon the industry the importance of hygienic conditions for bringing about improvement in the quality of products handled at various stages of production.

27. In the opinion of the Committee in order to ensure a steady and expanding foreign market for fish and fishery products from India it is essential to maintain high standard of the product especially from the hygienic point of view. The endeavour of the Government should therefore be to encourage the various units of exporters to opt for voluntary continuous inspection of their products.

28. The Committee are unhappy to note the large number of posts lying vacant in the Central Institute of Fisheries Technology. They are also unhappy to note that as many as 196 posts out of 346 posts are temporary. They need hardly emphasise that the continuance of a larger number of vacant and temporary posts and unattractive pay scales for scientific posts is likely to have a deleterious effect on the smooth functioning of a research institute. The Committee would like the Indian Council of Agricultural Research to examine the position and take necessary steps in the matter.

29. As regards pay-scales of the researchers and scientists, the Committee would like to draw the attention of the Government to the recommendation contained in para 2.13 of their Thirty-sixth Report (Fourth Lok Sabha) on the Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture)—Central Marine Fisheries Research Institute, Mandapam Camp.

30. The Committee are not sure whether the scheme for merit promotions and advance increments is being taken advantage of by the Institute. They need hardly stress that scientific and technical

personnel should be given suitable incentives for doing meritorious work. The Committee hope that Indian Council of Agricultural Research will take appropriate steps in this behalf.

31. The Committee feel that proper supervision over the work being done at the Institute is difficult unless all the Sections of the Institute are housed in a single and suitable building. They note that difficulties are being faced for installation and operation of heavy machines and equipments in the present buildings and that laboratory working space in all the buildings occupied by the Institute is insufficient. The Committee, however, appreciate that in view of the present financial stringency there may be difficulties in restarting the construction work suspended in October, 1965. They suggest that Indian Council of Agricultural Research may go into this question in all its aspects and find how best an improvement can be brought in the present situation.

32. The Committee are distressed to note that there has been heavy shortfall in the expenditure in as much as only Rs. 1,45,660 could be utilised out of Rs. 4,29,900 provided in the Revised Estimates for 1966-67 for the acquisition of land for the construction of staff quarters and purchase of engines. They need hardly stress that the programme of work, for which budget provisions have been made, should be executed with a sense of urgency.

33. The Committee would stress the desirability of revising the work of each sub-station and unit at regular intervals to watch the progress of work entrusted to them and to ensure that continuance of each of them is justifiable. The Committee would also stress that there should be close liaison and coordination between the Institute and various Sub-stations and Units on the one hand and between various Sub-stations and Units *inter se* on the other so as to avoid duplication and overlapping in the work being done by them.

(2) *Central Marine Fisheries Research Institute, Mandapam Camp*

Object: The primary objective of the Institute is to carry out investigations which would lead to the estimation and conservation of marine fisheries resources of the country.

ESTIMATES COMMITTEE'S OBSERVATIONS :

1. The Committee note the pioneering efforts made by the Central Marine Fisheries Research Institute in the charting and exploitation of fishing grounds in the inshore and off-shore areas, studies on the life histories of component species and collection of biological, oceanographical and other environmental data which are essential for understanding the cause of flucturations in the availability of

fisheries and for introducing conservation measures, when required, to obtain steady optimum yields. The Committee would, however, like to point out that the estimated marine fish production in India has varied between 5.3 to 8.88 lakhs tonnes during the years 1960 and 1964. There is a pressing need for increasing the production by means of increased catches so as to provide nutritious diet to the people, employment to a large number of fishermen and also provide an exportable surplus for purposes of earning foreign exchange.

2. The Committee commend the steps taken by the Institute for the exploration of the oceanic fishery resources of the seas around India. They hope that the researches would be further intensified with special emphasis on the pelagic and oceanic fishes and custacean. The Committee suggest that concerted steps be taken to gear up the work of the Institute by providing them with adequate essential equipments so that the objectives of the Institute are fully realised. The Committee would also stress the need for forging an intimate link with the fishing industry so that the researches undertaken by the Institute can be gainfully utilised.

3. The Committee realise that marine fisheries being essentially capture fisheries, all the basic research has to be carried out necessarily in the areas of occurrence of the fisheries. The research worker has to be where the fish and fisheries are distributed. Therefore, the Marine Fisheries Research Institute should necessarily be located nearest to important centres of fishing with facilities for reception of sea going research and exploratory vessels as a *sine qua non.*

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4. The Committee are surprised that although a period of 20 years has elapsed since the setting up of the Institute, the Ministry has now come to realise that Mandapam Camp is not ideally located for purposes of marine fisheries research. It should have been possible for the Director of the institute to move the Ministry on this matter earlier than 1965 when the proposal was said to have been finally mooted by him. The Committee are unhappy to note that the main criterion, which guided the selection of Mandapam Camp as the headquarters of the Institute, was only the availability of buildings at the Camp and the Institute was located there despite the conviction that the place was not suitable for the purpose. The Committee have little doubt that had the Institute been located at a Central Place, it could have made greater impact on research, and its output in physical terms would have been greater. The Committeee are of the view that the Institute, which holds a pivotal position for research in marine fisheries, should be located at a central place. As, however, a heavy financial outlay is involved in shifting the Institute, the matter has to be examined carefully.

The Committee suggest that a study team consisting of representatives from the Central Government, the Institute and the concerned State Governments may be appointed to go into the question in all its ramifications before arriving at a final decision.

5. The Committee are unhappy to observe that there has been a gap between the sanctioned and actual strength of the scientific staff of the Institute from year to year. The Committee are also unhappy that the post of Assistant Research Officer for Bacteriology had been kept vacant for nine years even when it was realised that there was no possibility of getting a good Bacteriologist. The delay of three years in filling up the vacancy of the Senior Research Officer for Oceanography also appears to be indefensible. The Committee need hardly emphasise that the continuance of a large number of vacant posts is likely to have deleterious effect on the smooth functioning of a research institute. The Committee hope that the Indian Council of Agricultural Research, to which the Institute has not been transferred, would take note of the present position and take energetic steps to fill up the vacant posts.

6. The Committee trust that the Institute would not keep a large number of temporary staff for unduly long period and that the incumbents would be confirmed as soon as they fulfil'the necessary conditions.

7. As regards scientific personnel *vis-a-vis* administrative staff from the statemement given in para 2.2 of the Report, it will be observed that as against the actual strength of 242 scientific and technical personnel in the Institute, there were 202 administrative and Class IV staff as on 1st April, 1967. In the opinion of the Committee, in research institutes the emphasis should always be more on the scientific staff and less on the administrative and ministerial staff. It is, therefore, desirable to fix some norms and ratios between the scientific and technical staff on the one hand and administrative and ministerial staff on the other.

8. The Committee note the organisational set-up and the functions of the Administrative Division of the Institute. The Committee suggest that the Standing Research Committee or the Appropriate Committee of the Indian Council of Agricultural Research may conduct a review of the present staffing pattern of the Institute with a view to locate the deficiencies in the working of the Institute in the various Divisions and suggest suitable remedial measures. The Committee also suggest that there should be an annual review of the staff position of the Institute by the Director as well as by the Council.

9. The Committee note with concern that 35 persons have left the Institute and its various Sub-stations during the last three years due principally to unfavourable pay-scales and meagre chances

of promotion. The Committee feel that similar situation may be prevalent in other institutes dealing with fisheries research. The Committee have no doubt that the frequent flight of personnel from one institute to another seriously affects the quality of research. The Committee however, are glad to note that the Indian Council of Agricultural Research has proposals to improve the pay-scales of the scientific staff and to give them better working conditions. The Committee hope that the Council would lose no time in reviewing the pay-scales of scientific staff prevalent in the fisheries research institute on the lines of the recommendations made by the Committee in para 87 of their 75th Report (Third Lok Sabha) on the Ministry of Food and Agriculture (Department of Agriculture)—Indian Council of Agricultural Research.

10. In the opinion of the Committee, unless there are suitable channels of promotion for the various grades of officers and staff, they are likely to loose interest in their work and this will ultimately affect adversely the smooth working of the Institute. The Committee, therefore, feel that to give impetus to the scientific and other staff there should be a provision for creation of intermediate/selection grade posts. The Committee also suggest that the question of giving suitable incentives for meritorious work to the scientific and technical personnel may be examined.

11 The Committee feel that centralisation of administrative work relating to pay, allowances, leave, promotion, etc. of the staff employed in the Sub-stations/Units/Centres, at the Headquarters of the Institute, at Mandapam may lead to certain amount of delay resulting in hardships for the staff. The Committee would suggest that the Indian Council of Agricultural Research may examine how best an improvement can be brought about in the present situation. The Committee consider that the financial powers of the Officer-in-Charge of the Sub-stations are inadequate. They suggest that the question of enhancing these powers may be considered so that Officers-in-Charge may be able to take decisions on the spot and approve items of expenditure without referring to the Headquarters every small item.

12. The Committee have no doubt that the research programmes already approved by the Ministry of execution by the Institute would be continued by the Indian Council of Agricultural Research. They, however, would suggest that the economics of those Projects which have continued for more than three years should be worked out to see whether it is worthwhile to continue them.

13. The Committee feel that the need for the hour is "coordinated research" and its application and they hope that it will be possible for the Indian Council of Agricultural Research to associate the State Departments of Fisheries in an ample and effective measure with the Central projects.

14. In view of the fact that initial training in basic research should continue to be with the universities and academic institutions, the Committee would like to suggest that universities of the maritime States may be persuaded to put increased emphasis on the training of researchers in the field of marine biology and, in fact, all fields of research pertaining to fisheries. The question of introduction of courses in fisheries in the curricula of the universities may be taken up with the University Grants Commission/Inter-University Board.

15. The Committee hope that the Council would see to it that the progress of research is not retarded due to paucity of funds.

16. It appears from the information furnished to the Committee that some of the research work being done by the Central Marine Fisheries Research Institute at Mandapam Camp, *e.g.*, survey of fisheries resources, researches on marine biology, oceanography, etc. are also being done in some of the maritime States. The Committee would suggest, therefore, that a thorough study of the work being done at the Institutes set up by some of the States should be made so as to ensure that there is no duplication of efforts and expenditure on identical schemes. Since the basic idea in transferring the Central Marine Fisheries Research Institutes and two other research institutes to the Indian Council of Agricultural Research is to have integrated and coordinated research work under one organisation, the Committee trust that the Council would look into the matter of coordination of research work undertaken by the Central and State Research Institutes. The Committee hope that the State Research Institutes would also be provided with adequate finances by way of timely grants and loans so that there is all-round development of research relating to fisheries.

17. The Committee would urge that a suitable method should be devised for channelising the grants through one agency, *i.e.*, Indian Council of Agricultural Research, so that the unnecessary duplication and overlapping in the research work could be avoided and proper control exercised over the progress of various research schemes.

18. The Committee are constrained to observe that it has not been possible for Government to provide the Central Marine Fisheries Research Institute with its own research vessel even though its need in connection with marine fisheries investigations in India was recognised from the very inception of the Institute. They are all the more unhappy to note the indifference shown by the Government, even though they were aware the "VARUNA" could not meet the requirements of the Institute fully and the present arrangement is very unsatisfactory.

19. The Committee would like to be assured that a research vessel suitable for the purposes of the institute will be obtained and supplied to the Institute at an early date.

20. The Committee feel that it should be possible for the Ministry to find enough foreign exchange for importing the minimum number of research vessels required if the Government are convinced that (i) these could not be built in India; and (ii) that there is urgent need for research vessels for fisheries development in the country. The Committee strongly feel that inadequate measures of this nature in the matter of research render the whole project a waste of men and material. In any case, the Committee would like to stress that the provision of a proper research vessel is an essential prerequisite for a Research Institute on Marine Fisheries.

21. The Committee realise that the question of constructing a research vessel for this Institute is linked up with the overall question of availability of indigenous capacity *vis-a-vis* imports. However, in the present context, they need hardly point out that the budget provisions should be made on a realistic basis as over budgeting is as bad as under-budgeting. The Committee feel that before providing the sums in the budget for the year 1966-67 and again in the year 1967-68, the Government should have ascertained whether the supply of the vessel was at all likely to materialise in the course of one year.

22. The Committee note the present arrangements for collection of data regarding production of marine fish on an All-India basis. They also note that statistics are also collected and compiled by various maritime States. The Committee consider it desirable that there should be a single agency for the collection of data regarding marine fisheries and overlapping of effort in this direction should be avoided. The Committee hope that the Technical Committee on Fisheries Statistics would be able to offer constructive suggestions in the light of the review of the work done by the National Sample Survey, Central Marine Fisheries Research Institute and the State Governments.

23. The Committee find that the staff strength of the Fishery Survey and Statistics Division has not been augmented on the lines suggested by Dr. Hickling. The Division is still headed by a Senior Research Officer only. They suggest that the staff position of the Division may be reviewed further.

24. The Committee note that liaison and coordination is being maintained by the Institute with the Deep Sea Fishing Station, Bombay, Indo-Norweign Project, and other Institutes set up by Central as well as various State Governments. There is, however, need to intensify the efforts so that any overlapping of duplication

of research work may be avoided in the initial stages of the operation of any scheme. The Committee also suggest that the proposal of constituting a coordination Committee in each State, as made at the meeting of the Standing Fisheries Research Committee (1965) may be actively pursued in consultation with the State Governments.

25. The Committee regret to note that although Dr. Hickling submitted his report on the working of the Institute as far back as 1962, the Government have not yet taken action on some of the recommendations contained in the report. The Committee also regret that the decisions arrived at by the Government on the recommendations made by Dr. Hickling were not formally communicated to the Director of the Institute resulting in unnecessary confusion and misunderstanding. The Director being the head of the Institute should have been taken into confidence and consulted in the matter of the implementation of the recommendations. The Committee hope that the Indian Council of Agricultural Research will pay due attention to such of the recommendations of Dr. Hickling as have not yet been implemented.

26. The Committee are glad to learn that important work that is being carried out by the Marine Biological Association of India at Mandapam Camp, which, it appears to the Committee, is being solely run with the active help and initiative of the Director and staff of the Central Marine Fisheries Research Institute. In view of the importance of the work being done by the Association which needs no emphasis, the Committee would suggest that the Indian Council of Agricultural Research should give suitable encouragement and financial assistance to this Association which is stated to have already earned international recognition.

27. The Committee need hardly point out that mere collection of useful information without disseminating it to the users serves no purpose. They regret to note in this connection that "except for casual information, the Institute does not maintain direct liaison with the Industry". They would, therefore, urge that all the Central Fishery Institutes should maintain close liaison and coordination with the users organisations, associations and industry and pass on the fruits of research and investigations freely to them as well as to fish farmers, fishery operatives, and fish processors so that the information could be utilised for the development of India's fisheries.

28. The Committee consider it unfortunate that as a measure of economy the ten Fisheries Extension Units started by the Ministry in 1956-57 had to be wound up on 31st March, 1967. Now that the Government is considering the question of strengthening extension work, the Committee would stress the need for establishment of Central Government Extension Units at the

earliest possible opportunity, wherever necessary. They would also recommend that a scheme may be worked out by which close liasion and coordination could be maintained between the Central Extension Units and State Extension Units on the one hand and between State Extension Units *inter se* on the other.

29. The Committee hope that the Extension aspect of the Central Marine Fisheries Research Institute will be looked after adequately now that the Institute has gone under the control of the Indian Council of Agricultural Research.

30. The Committee need hardly stress that timely publication of bulletins, News Letters, and other periodical publications on technology can go a long way in bringing home the results of research and investigations made by the various Research Institutes to the users. The Committee commend the efforts made by the Central Marine Fisheries Research Institute in this behalf. They, however, feel that there is much leeway yet to be made in this matter. They suggest that Government should take suitable steps in this direction early so that the results of research could be brought to the level of people engaged in fishing in an easily assimilable form. One of the ways in which this could be done is to bring out publications in simple regional languages and make them accessible to all concerned. The Committee suggest, therefore, that this question be taken up with the concerned State Governments so that the results of researches and investigations made by various Fisheries Research Institutes are taken advantage of by the fishermen, fish processors, etc.

31. The Committee recommend that provision of a Rotaprint Press for the institute should be expedited.

32. With regard to the suggestion that the Institute be provided with facilities to bring out its own journal, the Committee would suggest that the matter may be examined by the Publication Committee of the Indian Council of Agricultural Research in all its aspects.

33. The Committee feel that very few universities in India are taking advantage of the facilities provided at the Institute for research leading to the award of Ph. D. and D. Sc. Degrees. They are not aware of the reasons why Madras University has not recognised the Institute as a Centre for carrying out researh leading to award of Ph. D. and D. Sc. degrees. The Committee suggest that concerted efforts should be made to attract more and more researchers for conducting research at the Institute. They also suggest that the Ministry may take up with the State Government of Madras and the University of Madras the question of according recognition to the Institute as a centre for research on marine biology leading to the award of doctorate degrees.

The Committee note that only 35 scientists and research workers had come to the Institute from foreign countries for doing research work (23 in 1962; 10 in 1964; and 2 in 1966). The Committee suggest that appropriate steps may be taken to attract a larger number of researchers from foreign countries for doing research work at the Institute, after fully catering to the needs of Indian research workers.

34. The Committee are concerned to note that the Library of the Institute which is claimed to be the best Library in fisheries and marine sciences in South-East Asia is poorly equipped and inadequately staffed for the last several years. They are unhappy to learn that Government has not taken any action to equip and staff the library adequately even though the matter has been, on several occasions, referred by the Institute to them. The Committee hope that the Indian Council of Agricultural Research will take immediate and adequate steps in this behalf.

35. The Committee note that the Laboratory is now well equipped.

36. The Committee need hardly emphasise the desirability of staffing the General Museum of the Institute adequately. They apprehend that if it is not staffed and maintained properly the exhibits may deteriorate for lack of proper care and be lost to the posterity due to neglect. They would also urge that a guide lecturer should be provided for the Museum so that he could explain the exhibits contained therein to the students and visitors who visit the Museum in large numbers.

37. The Committee have already commented on the "Decentralisation of work" as between the Headquarters of the Institute and its various sub-stations/units/centres in para 2.21 of the Report. The Committee feel that the question of greater delegation of financial and administrative powers to the various officers-in-charge should be gone into thoroughly so as to eliminate unnecessary delays.

38. The Committee feel that expansion of the activities of the Madras sub-station of the Institute is closely linked with the provision of permanent buildings for the sub-station. The Committee are concerned to note that no staff expansion has been made purely on the ground that there is paucity of accommodation and working space. They apprehend that the work on the Fourth Plan Schemes, when approved, would seriously lag behind, if simultaneous steps are not taken to provide permanent buildings for the Sub-station, especially in view of the difficulty in obtaining rented accommodation in Madras. Now that the Institute has gone under the control of the Indian Council of Agricultural Research, the Committee hope that immediate steps will be taken in this direction for concerted action both with regard to personnel and equipment on the one hand and accommodation on the other.

39. The Committee regret to note that the administrative set-up of the Ernakulam Sub-station is inadequate. They need hardly point out that an adequate administrative set-up is a prerequisite for smooth and efficient functioning of an institution. They would urge that the matter be examined thoroughly and an early decision taken.

40. The Committee also feel that proper supervision over Sub-station is difficult in view of the fact that it is housed in two separate buildings quite at a distance from one another. The Committee would like the Indian Council of Agricultural Research to look into this question immediately and decide if the premises of the former Indian Coconut Research Institute could be allotted to the Sub-station for the time being pending construction of its own building.

41. In view of the fact that Calicut is a very important fishing centre, the Committee stress that the Sub-station of the Institute at Calicut should be strengthened and the feasibility of providing, enough landing and berthing facilities there considered.

(3) *Central Inland Fisheries Research Institute, Barrackpore*

Objects : The objective of the Institute is to study and elucidate scientific principles which can be applied in the utilisation of all available inland waters for maximum production of fish for food in the country.

ESTIMATES COMMITTEE'S OBSERVATION

1. The Committee note the objectives of the Institute and the efforts made so far to realise the same. They are glad that significant advances have been made in the research on pisci-culture and fish production. Being the premier research institution in the country devoted to inland fisheries, the Institute has a great responsibility in evolving new methods and techniques for fish culture and suggesting means for increasing fish production in available inland waters. Alongside the researches on fish cultural techniques investigations on the biology of important fisheries, etc. there is an imperative need for disseminating the results of researches to the fish farmers who want to take up fisheries as a profession. The Committee hope that the Institute would keep this objective in view while carrying on research work.

2. The committee note that although the administrative control of the Central Inland Fisheries Research Institute has been transferred to the I. C. A. R. with effect from 1st October, 1967, exploratory fishing in Sundarbans estuaries, brackish water fishing farm in lower Sundarbans and Inland Fisheries Training Section, which were hither to dealt with in the I. C. A. R. In view of the fact that brackish water fish culture can become a very major industry if properly developed, the importance of the exploratory fishing and

brackish water fish farming started in the Sundarbans areas can hardly be over-emphasised. The Committee would, therefore, like to be assured that the work already done in exploratory fishing in Sundarbans estuaries and in setting up the brackish water fish farm in Kakdwip would continue to be dealt with by some Central agency so that they receive the attention they deserve.

3. The Committee are glad to note that the Director of the Institute conducts an annual review of the staff strength of the Institute. The Committee would, however, like to suggest that besides an annual review by the Director, there should be a separate review every year of the staffing pattern of the Institute by the Standing Research Committee of the Ministry or the appropriate Committee of the Indian Council of Agricultural Research. That Committee should not only examine to what extent the available resources of the Institute have been utilised to carry out the projects already entrusted to it, but also assess the need for additional posts in the Institute in the context of new research programmes proposed to be undertaken by it. The Committee, while reviewing the research programmes, should also locate the deficiencies in the various Divisions and Sections of the Institute and suggest suitable remedial measures.

4. The Committee are surprised to note that against 531 sanctioned posts as many as 106 posts of all categories, *i.e.* 26 per cent were vacant on 7th September, 1967. The Committee regret that despite the observations of the two reviewing teams—the Chopera Committee (1954) and Professor Swingle (1961)—that considerable delays took place in filling up vacant posts, Government did not consider it necessary to tackle the problem effectively and take suitable remedial measures. While the Committee are included to accept the Ministry's contention that staff has done useful work, they have no hesitation in saying that their output would have been larger in physical terms had all the vacant posts been filled up. While the reasons for the larger number of posts remaining vacant might be diverse, their effect on the efficiency of the Institute must be cumulative. The Committee apprehend that unless quick and energetic steps are taken to fill up the vacant posts, the execution of the projects taken up by the Institute would be seriously hampered. The Committee appreciate the difficulties of the Ministry in filling up some scientific posts with suitable personnel on account of unattractive pay-scales attached to them. They, however, feel that this is a matter which should have been known to the Ministry when they planned their programmes of work requiring the services of competent technical personnel. Steps should have been taken to obtain necessary financial sanction to revise the pay scales in appropirate cases so as to attract persons with requisite qualifications.

Now that the Central Inland Fisheries Research Intsitute has come under the control of the Indian Council of Agricultural Research, the

Committee hope that organisation would take note of the present position and adopt suitable remedial measures in this direction.

5. The Committee are unhappy to note that suitable departmental candidates were sometimes not forthcoming to fill up promotional quotas and as such there was delay in filling up some of the posts. In the opinion of the Committee, this only shows a lacuna in the training arrangements in the Institutes. The Institute should so plan their work and train up their personnel that at each level there is a second rung of the qualified scientists who would be in a position to come up and man the senior scientific posts as and when they fall vacant.

6. The Committee are unhappy about the inordinate delay in filling up the posts of Deputy Director which has remained vacant since January, 1964. They fail to see why requisite qualifications for this post were not laid down when a requisition was sent to the Union Public Service Commission in 1964. The Committee would urge that, before a new post is actually sanctioned, care should be taken to spell out in detail the qualifications for this post and experiences which a candidate for the same is expected to possess. While sending requisitions to the Union Public Service Commission for filling up the vacant posts, full particulars about the qualifications and research experience etc. required of the candidates should be sent simultaneouly. It should also be ensured that no post remains vacant for more than six months and, if necessary, arrangements should be made to fill up the vacant posts on an *ad hoc* basis, so that research work is not handicapped.

7. The Committee would suggest that the Ministry may examine the causes of delay in filling up such vacant posts of Classes III and IV staff as care-taker, engine driver, launch driver, laboratory boy, fisherman, boat driver, boatman, sweeper, etc. which are normally filled through Employment Exchange. In case such candidates are not forthcoming from the Employment Exchanges, no time should be lost to recruit the same from the open market.

8. The Committee are not happy about the continuance of a large number of temporary posts some of which were created as early as 1961. Apart from the deleterious effect the temporary nature of a post has on the pensionary rights of a worker, the quality of research is adversely affected in as much as a temporary employee would be more preoccupied with the search for a secure job to the detriment of research. The Committee have already dealt with this problem in para 99 of their Seventy-fifth Report (Third Lok Sabha) on the Ministry of Food and Agriculture (Department of Agriculture)—Indian Council of Agricultural Research. They hope that the Council would consider the cases of temporary posts in the Central Inland Fisheries Research Institute in the light of the recommendation made in their Seventy-fifth Report.

9. The Committee note that among the category of other technical posts are included such persons as photographer, artist, computor, librarian, scientific assistant, driver, mechanic, carpenter, etc. It is obvious that these functionaries do not undertake research or teaching work. Taking the teaching staff in the category of scientific person, the percentage of scientific staff in the Institute comes to 33. As against this, the percentage of non-scientific staff is 67. The Committee feel that there is an imbalance in the staffing pattern of the Institute in as much as there is a preponderance of administrative staff as compared to scientific staff. It is desirable to lay down a correct ratio between the administrative staff and the research staff not only in this Institute but in all Central Research Institutes dealing with fisheries.

10. The Committee would suggest that the Central Inland Fisheries Research institute and the Indian council of Agricultural Research to which the Institute is now transferred, should carefully consider the general principles laid down by the Scientific Advisory Committee of the Cabinet while deciding the administrative pattern of the Institute. It should be ensured that the Institute is staffed with proper scientific personnel, there is clear delegation of powers, and that scientists are provided with proper administrative personnel to relieve them of routine administrative work.

11. The Committee would suggest that the question of setting up of a Governing Council for this Institute on the lines of the general principles laid down by the Scientific Advisory Committee of the Cabinet should be considered and the Estimates Committee informed in due course about the action taken in the matter.

12. The fact that the chances of promotion to higher posts or higher scales for scientific personnel are less in Research Institute has already been highlighted by the Committee in their 75th Report (Third Lok Sabha) on the Ministry of Food and Agriculture (Depatrment of Agriculture) —Indian Council of Agricultural Research. The Committee would reiterate the recommendations made in para 91 of their Report and suggest that the matter be pursued vigorously.

13. The Committee feel that the presence of two or more officers of identical rank at the same Sub-station and one of them being designated as the Officer-in-Charge-cum-Senior Research Officer is likely to lead to administrative difficulties. They, therefore, recommend that the designation of the Senior Research Officer, who also looks after the administration of a Sub-Station, should be suitably changed.

14. The Committee feel that the Head of the Sub-Station, who has to undertake research work, should not be burdened with administrative duties. They suggest that the question of providing suitable administrative assistance to the Head of each of the Sub-stations may be considered.

15. The Committee would recommend the extension of the scheme of merit promotions and advance increments to the Central Institutes on the Fisheries side, if not already done, so that such of the members of the staff as have done outstanding work are suitably regarded.

16. The Committee commend the steps taken by the Standing Fisheries Research Committee for coordination of fisheries research in the country. They suggest that the proceedings of the Standing Fisheries Research Committee should be publicised and made available to all fisheries research institutes in the Centre and in the States as well as to universities which impart teaching in fisheries and allied sciences.

17. The Committee suggest that the Standing Fisheries Research Committee should hold their sittings at important fishing centres of the country so as to bring the representatives of the industry into closer contact with research workers.

18. The Committee feel that for better coordination the regional committees should meet frequently and discuss problems of common interest and a report of discussions held at such meetings should be made available to the Standing Fisheries Research Committee.

19. The Committee cannot overemphasise the importance of taking up research projects which are likely to have a definite impact on fish production. They are glad to note that one of the criteria for selecting new projects is the benefit that would secure in terms of increased production. They would, however, stress that before a project is taken up for implementation, the economics thereof should be fully gone into and worked out in detail.

20. The Committee are unhappy to note that the institute has no mechanism to assess to impact of its researches on fishery development either in West Bengal or in other States. they suggest that a method may be devised in consultation with the State Governments whereby it should be possible for the institute to adjudge to what extent increased yield has been effected as a result of the techniques evolved by it.

21. The Committee cannot comprehend why it should not be possible to indicate the date of inception of a project. For purposeful planning, it is imperative that time-targets setting out dates of inception and probable dates of completion of projects are laid down. All projects should be classified into short-term and long-term ones, and tentative dates for completion should be insisted upon. It should be the responsibility of the Principal Investigator, who works out a particular scheme, to send annual progress reports of the scheme, so as to enable the Director and through him the Standing Fisheries Research Committee to evaluate the progress

of the scheme. If a project has to be abandoned, it is desirable that it is discontinued at the earliest possible opportunity to save time and money.

22. The Committee would suggest that the Indian Council of Agricultural Research may examine all such schemes which have continued or are continuing for more than three years in order to find out whether the results achieved are commensurate with expenditure.

23. The Committee are glad to note that the Ministry have taken a decision to set-up a unit for research on fish farm designing in the Central Inland Fisheries Research Institute, Barrackpore. The fish farms not only serve as potential sources for supply of fish by culture practices but also as composite units for demonstration of improved methods of pisciculture and observation centres on breeding of various exotic and indigenous species, their rates of growth, their adaptability to various environmental conditions and their optimum food requirement in different regions of the country under control conditions. Now that State Goverments are setting up their own fish farms to augment the production of fish seeds, it is imperative that there is some standardisation in the designing of such farms. The Central Inland Fisheries Research Institute, Barrackpore should, in due course, be in a position to provide guide-lines to the State Departments of Fisheries in the matter of designing fish farms so that economies in construction as well as reduction in the cost of reclamation of water areas could be achieved. The Standardised designs prepared by the Institute should be made available to progressive farmers intending to take up fish farming as their profession. The Committee would stress that Fish Farm Designing Unit in the Institute should be set-up without any delay.

24. The Committee are of the view that for any successful implementation of fish culture programme it is of paramount importance that fish seed of the desired species are made readily available in sufficient quantities. Since the production of the fish seed in the country at present is grossly inadequate and cannot meet the demand of even adequately stocking the areas cultivated, the Committee feel that there is an immediate need to make concerted efforts for increasing production of fish seed.

The Committee would in this connection like to invite the attention of the Government to the Fish Seed Committee Report, 1966 wherein it has been recommended that the objective of all the States should be to establish at least one centre for induced breeding in each district, with required complement of nurseries and rearing tanks, within the next ten years. Experimentation to standardise the doses, study of optimum breeding conditions like temperature, oxygen, etc., which are conducted at the Central Inland Fisheries Research Institute, should be statistically designed and the results thereof should be made available within the next two years.

25. The Committee strongly recommend that States which have already succeeded in induced breeding of carps should intensify their activities in this direction, with a view to enhance the production of seed. In the case of these States which have not yet achieved success, trained extension officers should be sent to demonstrate the techniques.

26. As the success of induced breeding of major carps depends on the 'receptivity condition' of the breeders in regard to pituitary hormone injections, the Committee feel that it would be worthwhile to collect information regarding the periods at each centre during which the breeders are likely to react favourably to hormone treatment. This would provide gainful knowledge for achieving success at each centre in the future years. Further thought can then be given as to how best the period of receptivity of the breeders can be prolonged at each of the centres.

27. The Fish Seed Committee, 1966 have stated in their report that 'adiposity in carps appears to come in the way of the breeders attaining receptivity condition'. The Committee suggest that efforts must be made to determine items of diet that would not lead to accumulation of excessive fat in the breaders.

28. The Committee understand that experiments on the induced breeding of mullets have already been initiated by the Central inland Fisheries Research Institute, as well as by the Government of Kerala. They suggest that the work should be continued and experiments to induce Bhekti to breed through pituitary hormone administration should also be undertaken by the Central Inland Fisheries Research Institute at an early date.

29. The Committee understand that work on the induced breeding of Hilsa through pituitary hormone administration has also been recently initiated by the Central Inland Fisheries Research Institute. They suggest that this work should also be continued by the Institute alongside experiments on its suitability for culture in impoundents. The seed thus obtained can also be utilised for stocking rivers where necessary.

30. The Committee suggest that possibility of establishing a series of pituitary gland 'Banks' may be explored by the Central and State Governments.

31. The Committee are unhappy to note that about 9,59,487 acres of water areas which are readily available for culture are left unutilised. They strongly recommend that large stretches of cultivable water

areas in the country which are at present left unutilised should be brought under cultivation by using the seed procured through induced breeding.

32. The Committee are concerned to note that economics of induced fish breeding has not been worked out so far by the Central Inland Fisheries Research Institute in spite of the fact that evolution of induced breeding technique is said to be the most significant achievement of the Institute and there is a pressing need for quality fish seed from various states. The Committee hope that no time would be lost in under taking a study of the relative merits and economies of productions of fry through collection from natural sources, pituitary injections and bundh breeding by the Economic Study Unit that is soon going to be set-up in the Institute.

33. The Committee would like to stress that they attach greater importance to the development and increase in inland fish production by greater exploitation of the fish seeds which are available from the natural waters. They need hardly stress that the collection of fish seed from the natural waters can be increased manifold as at present only 2 per rent of the natural fish seed available in natural waters are caught. Moreover, as already revealed in a study made some time back in Orissa, while the cost of pituitary spawn was Rs. 125 per 50,000 spawns, the cost for riverine collection was only Rs. 20 for the same number. In the circumstance the Committee would urge that Government should encourage as all levels collection, exploitation and utilisation of fish seed from the natural waters alongside production of fish seeds by artificial means.

34. The Committee suggest that productive ponds providing suitable nursery must be selected near all breeding centres rearing the young ones of various species and for maintaining a good stock of breeders.

35. The Committee cannot too strongly stress the need for coordination and proper dissemination of the results of researches achieved in the various induced breeding centres under the Central and State Governments. The Central Inland Fisheries Research Institute should coordinate with State Fisheries Departments and collect information regarding the progress of the schemes in various States. It would be useful if the data collected are published in the Annual Report of the Institute.

36. The Committee attach considerable importance to such items of research as are likely to have a definite impact on the yield of fish. From this stand point, there cannot be two opinions about the need for strengthening research on the introduction of exotic fishes in reservoirs and their culture along with indigenous varieties.

37. The Committee would like to stress that fish farmers accustomed to grow the traditional fishes have a natural resistance to the introduction of exotic fishes, and it is for the extension staff of the Institute to explain and demonstrate to fish farmers that exotic fishes like mirror carps, grass carps, etc. do not denude the waters by eating away popular varieties of fishes.

38. The Committee feel that it is desirable that economics of mixed farming are fully worked out and made known to the State Departments of Fisheries for the benefit of progressive farmers who want to take up mixed farming to augment their income.

39. The Committee feel that there is a need for acquainting the fish farmers about the harmful effect on the growth of carp fry by the random introduction of Tilapia. The Institute may bring out popular pamphlets to educate the fish farmers about the economics or effect of culture of Tilapia in ponds and reservoirs.

40. The Committee note that the Central Inland Fisheries Research Institute in conjuction with the State Agricultural Departments has been carrying on investigations on paddy-*cum*-fish culture during the last 12 years and the results achieved so far have not proved to be encouraging. The Committee feel that the scheme has not been properly conceived and at no time an attempt appears to have been made to work out the economics of the whole project. The Committee are surprised that there is no seprate account of expenditure incurred on the project. In view of the fact that the experiment has been going on for a number of years in several States, the expenditure on this infructuous project must be considerable. The Committee suggest that the Indian Council of Agricultural Research may conduct an appraisal of the entire scheme with a view to decide once for all whether the scheme should be continued or abandoned.

41. The Committee understand that there are vast areas of cultivable brackish waters which are potentially rich resources of fish production and are still unharnessed at present. Barring a few exceptions, there is hardly any information regarding the availability and magnitude of brackish water fish seed in the country. The Committee would suggest that a survey of the areas of cultivable brackish waters may be undertaken by the Ministry in consultation with the State Governments.

42. The Committee are glad to know that an experimental fish farm is going to be set-up at Panna (Madhya Pradesh). They feel that the setting up of this farm would give a much-needed fillip to the development of inland fisheries in Madhya Pradesh and other adjoining States. The Committee hope that the Fish Farm would undertake experiments not only in regard to the known varieties of fishes which thrive in West Bengal and Orissa but also

other economic species which can be grown under control conditions in other parts of the country. The Committee would stress the need for the early activisation of the project.

43. The Committee are glad to note that the researches are being conducted by the Institute for the control of weed by chemical and other means so as to preserve fisheries. They would, however, emphasise the need for working out the economics and usefulness of various weedicides so as to recommend them as a standard eradication method for submerged weed.

44. Alongside experiments on the chemical weedicides, the Committee would suggest that trials may be conducted to see if water-hyacinth and other water weed could be used as compost for agricultural crops or as nutrients for enriching the fish ponds for better production of fish.

45. The Committee are glad to note the steps taken by the Central Inland Fisheries Research Institute for combating pests and diseases of culture fishes. They would urge that effective steps may be taken in consultation with the State Governments concerned to popularise among the fish farmers such of the chemicals as have proved effective against the diseases of culture fishes.

46. The Committee suggest that a programme for training of fish farmers in the application of chemicals, pesticides, etc. in fish culture tanks and ponds may be drawn up in consultation with the State Governments concerned.

47. The Committee are glad to note that the problems of Chilka Lake, an important fishing centre in the country, have been thoroughly studied by the Chilka Investigation Unit set-up by the Central Inland Fisheries Research Institute. The study team has made several useful suggestions to prevent depletion of stock as also to step up fish production. The Committee, however, are surprised that no information appears to be available in the Ministry or the Institute as to the action taken by the State Government on the recommendations made by the Investigation Unit. Fisheries research involves a coordinated effort of both the Central and State Governments. In this particular case, as investigation was undertaken by a study team appointed by a Central Institute, it was but proper for the Ministry to keep in touch with the State Fisheries Departments to find out what follow up action has been taken in the light of the suggestions made. In any case, the report should have been considered by the Central Board of Fisheries and necessary guide lines given to the State Department of Fisheries as regards the methods to be adopted for preserving the fish stock of the Chilka Lake. Considering the importance of Chilka as a source of fish food and the support that it gives to the industry,

the Committee would stress that the Ministry may, in consultation with the State Governments, adopt suitable measures for conservation of the Chilka fisheries.

48. The Committee regret to note that Government have not been able to create so far as Research Unit on river survey for Brahmaputra recommended to be set up immediately by the Central Board of Fisheries as early as 1965. There has been considerable delay in finalising the matter and some more time is likely to be taken in the construction of the vessel. The Committee feel that the Ministry, once they were convinced about the usefulness of the project, should have proceeded with speed in the matter and assisted the State Government in getting a suitable vessel for survey purposes. The Committee hope that Research Unit on Brahmaputra River Survey would be set up without further delay.

49. Considering the importance of Hilsa fisheries, the Committee appreciate the steps taken by the Institute to strengthen research and investigations in this direction. The Committee understand that there are vast Hilsa resources in Godavari river and the Andhra Pradesh Fisheries Department has been conducting investigations on Hilsa Fisheries. The Committee would stress the need for coordination of work carried out by the Central and State agencies so as to avoid duplication of researches. The Committee hope that the data collected by the Institute in connection with maturation, breeding season, migration, age, class, sex composition and food habits of Hilsa Fish would be processed and published for the guidance of State Fisheries Departments.

50. The Committee understand that no large scale production of trout could be effected for want of hatchery and rearing ponds. It continues to be cultured in Kashmir and other places according to methods and techniques introduced in India more than 50 years ago. The Committee are unhappy to note that there has been no significant development of trout fisheries since the inception of Cold Water Fisheries Unit in 1968. No new techniques and methods appear to have been evolved for the culture of such important fisheries as trout, mirror carp, mahseer, etc. The Committee cannot over-emphasise the need for intensive research to provide a scientific basis for the development of trout fishery and other hill fisheries.

51. The Committee suggest that the question of improving the fishing methods and introduction of new gear to be used in the trout fisheries in the hilly districts of Punjab, Himachal Pradesh and Kashmir may be actively considered by the Ministry. The assistance of the Central Institute of Fisheries Technology may be sought in the fabrication of suitable fishing gear. The Committee also suggest that vigorous attempts may be made for the develop-

ment of trout and other high altitude fisheries in hilly areas of Uttar Pradesh, Mysore, Kerala, Haryana and Madras in consultation with the State Governments concerned.

52. The Committee consider that there is an urgent need for making an intensive study of the pollution of rivers, specially the river Hooghly by the discharge of factory wastes which are considered to have a deleterious effect on fresh water fishes and specially the Hilsa fish. They also feel that this is a matter which should receive the most careful consideration of the Public Health Irrigation and Fisheries Departments of the State Governments concerned. The Committee strongly feel that the Ministry should take pollution Board in consultation with the State Governments concerned.

53. The Committee note the studies conducted by the Fish Spawn Prospecting Teams in surveying the potentiality of various spawn yielding river stretches. They would urge that the conclusions drawn from the surveys may be utilised for proper exploitation of the fishery resources in the rivers which have already been surveyed.

54. The Committee note that investigations on the feasibility of transplanting desirable species of fish and prawn have already been initiated by the Institute. They would suggest that the results achieved in this direction may be published in the Annual Reports of the Institute. The progress of the scheme may also be closely watched by the Central Fisheries Research Committee or the appropriate Committee of the Indian Council of Agricultural Research.

55. The Committee suggest that feasibility of implementing the following recommendations of the Fish Seed Committee may be examined at an early date :

"(d) Breeding grounds of major carps should be located and charted out all over the country to enable fuller exploitation of the resources and also to take suitable measures for the protection of breeding grounds.

(e) Hitherto, very little efforts have been made to locate centres of availability of seed of brackishwater fishes. Hence, the concerned State Government should make intensive efforts towards exploitation of such resources. The Central Institute may initiate investigations to develop suitable gear for the collection of brackishwater seed."

56. The Committee attach considerable importance to collection of fisheries statistics and survey of available inland waters so that planned action could be taken to step up resources. They are unhappy that although a decade has passed since the

All-India Fisheries Conference adopted a resolution on the subject, no effective steps have been taken by the Ministry for collection of statistics relating to Inland Fisheries on a scientific basis. They would suggest that the Institute of Agricultural Research may in conjuction with the National Sample Survey, evolve suitable techniques for conducting surveys from the point of veiw of estimating total production of fish on an all India basis.

57. The Committee note that the Institute is also collecting catch statistics from selected rivers and estuaries, but the work has been accorded a low priority. They would suggest that the Institute should coordinate their efforts with those of the National Sample Survey so that a methodology may be laid down for a scientific enumeration of fish catches on a country-wide scale.

58. The Committee would suggest that the universities having departments of Zoology should be increasingly associated with the institutes of fisheries in general and Central Inland Fisheries Research Institute in particular in the solution of problems of fundamental nature relating to fisheries.

59. The Committee hope that the Indian Council of Agricultural Research which gives grants to research institutes and to universities, will farm out certain projects to universities on a continuing basis. Problems of applied nature may be entrusted to the Central Inland Fisheries Research Institute and State Research Institutes for solution.

60. The Committee are glad to note that Sub-stations of the Institute are in close liaison with the Fisheries Departments of the particular States in the research projects undertaken by the Institute are implemented in collaboration with State Fisheries Departments. The Committee would, however, stress that the Institute should also maintain close and direct liaison with other Research Institutes dealing with fisheries in India and abroad.

61. While noting the present arrangements for evaluation of the research work by the Director and the Officers-in-charge of the Sub-stations, the Committee would like to suggest that a periodic evaluation of the work of the Institute may be conducted by an Achievement Audit Committee consisting of specialists. In this connection, the Committee would like to invite the attention of the Ministry to recommendations made by them in para. 9 of their 76th Report (Third Lok Sabha) on the Ministry of Food and Agriculture (Department of Agriculture)—Indian Agricultural Research Institute.

62. The Committee are unhappy that having set up a chain of extension units for dissemination of results of researches carried out by the Central Fisheries Research Institute, the Ministry considered

it necessary to wind them up as a measure of economy. In the opinion of the Committee, this step was retrograde one. Research cannot be carried out in isolation. It is essential that the benefits flowing from research should be made available to the fishermen who require to be enlightened about the latest scientific techniques for the exploitation of fishery resources. The Committee, however, note that the Ministry is contemplating to set-up a proper extension machinery on the same lines as agriculture. The Committee hope that the Institute as well as the Indian Council of Agricultural Research would, in cooperation with the State Departments of Agriculture, devise effective machinery to ensure that the results of practical value emerging from the research activities of the Institute are systematically and speedily transmitted to the fish farmers on a more extensive and countrywide scale.

63. The Committee suggest that the Institute may arrange to publish research results in the form of attractive pamphlets in popular styles and send them to State Governments, Farmers' Organisations and other concerned agencies. Instructional films depicting improved methods and advances in fisheries and the advantages flowing from them should be prepared and widely displayed in rural areas. Arrangements should be made for giving publicity in improved practices, fishing gear and equipments, etc. at fairs and exhibitions held in the countryside.

64. The Committee attach considerable importance to periodic meetings of the research workers employed in the Central Inland Fisheries Research Institute as also in the various State Research Institutes for discussion of common problems and exchange of information relating to fisheries research being conducted by them. The Committee suggest that arrangements may be made for holding periodic meetings of the research workers of Central and State Research Institutes in various research stations/sub-stations by rotation.

65. The Committee note that the training course in the Institute is now controlled by the Director, Central Institute of Fisheries Education, Bombay. The Committee hope that the training would continue to be imparted at Barrackpore so as to meet the special needs of States in the eastern region where a large number of persons trained in inland fisheries is required.

66. The Committee are unhappy that the facilities available in the Institute for training in inland fisheries have not been fully utilised, in view of the fact that the number of trainees is coming down from year to year, the Committee suggest that the causes of this downward trend may be thoroughly examined and suitable remedial measures taken in consultation with the State Governments whose responsibility is to sponsor candidates for the training course.

67. Considering the present intake of students, the Committee think that the strength of the teaching staff is adequate. Although the training course has now come under the control of the Central Institute of Fisheries Education, the Committee hope that the research staff of the Central Inland Fisheries Research Institute would continue to deliver lectures on important subjects pertaining to inland fisheries to the trainees.

68. The Committee feel that some of the reasons indicated for delays in execution of work relating to construction of buildings etc. are such as could have been avoided by better planning and execution. They are, however, glad that steps have now been taken for proper utilisation of the funds.

69. The Committee note the proposal of the Ministry to allocate funds according to the projects to be undertaken by the Institute. The Committee suggest that alongside project budgeting, the Ministry should also conduct periodically an assessment of the progress made in respect of each project with a view to see whether the monies sanctioned for a project are being well laid out.

CENTRAL INSTITUTE OF FISHERIES OPERATIVES, ERNAKULAM :

Objects:—The objective of the Institute is to create suitable and adequate manpower to most of the demands of the fishery industry of India and to place to Indian fishery industry on modern lines capable of exploiting the fisheries in the high areas. The Institute trains operatives suitable and adequate for manning the High Sea Fishing Vessels and for related jobs.

The Institute has facilities for training different categories of personnel needed for High Sea fishing industry such as Skippers, Fishing Mates, Engine Drivers, Gear Technicians, Boat Building Foremen, Shore Mechanics, Radio Telephone Operators and Teacher Trainees. In addition, facilities are being created for giving refresher course for Skippers, Fishing Mates and Engine Drivers.

ESTIMATES COMMITTE'S OBSERVATIONS :

1. The Committee note that the Central Insitute of Fisheries Operatives has been set up to provide institutional training to operatives at various levels of skills in fishing, navigation, boat-building, marine engineering, etc. The Committee hope that the Institute when fully developed would be in a position to satisfy the growing demands or various categories of operatives required for the fishery industry in the coming years. The Committee would stress the need for maintaining closed coordination with the Central Institute of Fisheries Education at Bombay which gives composite training to administrative personnel of higher categories in a large number of

fields pertaining to fisheries. These two Institutes as well as the State Training Institutes should be in a position to meet the man-power requirements of the developing fishery industry.

2. The Estimates Committee note that the Committee on Fisheries Education had given the revised assessement of technical personnel for fisheries required to be trained by 1966 in its report published in August, 1959. As against 150 Skippers, Master Fishermen, Mates, etc. for large and medium vessels, 50 Gear Technicians and 100 Engine Drivers, the Institute could train only 59 Fishing Mates, 49 Engine Drivers and 19 Gear Technicians by the end of the Third Five Year Plan period. The Committee feel that had the Government acted promptly to set up the Central Institute of Fisheries Operative on the basis of the recommendation made by the Committee on Fisheries Education in 1959, facilities could have been created much earlier for imparting training to the various categories of technical personnel required for fisheries development. As matters stand, the Institute was set up in 1953 and is confronted with a big gap between the requirement and the availability of technical personnel. An all-out effort has, therefore, to be made to bridge this gap so that the fisheries development plans are not hampered.

The Committee note that 500 Boat-Building Foremen, 100 Teacher Trainees and 250 Shore Mechanics would be required by 1970-71 but the Institute would not be in a position to meet this requirement in full even after creating additional facilities by way of new sub-stations. They are also unhappy to note that this Institute would not be able to train any Marine Engineers even by 1970-71 although 60 Marine Engineers would, according to the Ministry, be required by them. The Committee, however, are glad to note that the target for training Skippers, Engine Drivers (Class I) and Radio Telephone Operators would be exceeded by 1970-71 after additional training facilities are created by that time.

The Committee would suggest that a more realistic assessment of the training requirements of the various categories of technical personnel required during the next five years be made and a phased programme drawn up for augmenting the training facilities in the Institute as well as in the sub-stations which are proposed to be set-up, so that there is no further shortfall in the number of trained personnel by the end of 1972-73.

3. The Committee are surprised that no undertaking had been given by the State Governments regarding the actual number of persons they would depute for training to the sub-stations of the Central Institute of Fisheries Operatives. It is also surprising that no firm and reliable assessment had been made with regard to the requirements of the private sector before setting up the Institute and the sub-stations. The Committee need hardly point out that without

proper assessment of the number of trainees that were expected to be trained in the Institute and its sub-stations the basis of assessment adopted by Government is likely to prove incorrect and may, therefore, affect the programme of training of the various categories of personnel. The method adopted in assessing the requirements of the private industry also appears to the Committee, to be a round about one. The Ministry should have obtained specific figures from the associations or representatives of the industry concerned in the various regions of the country so that an integrated plan for training could be drawn up and implemented.

4. The Committee note that the duration of the training course in the various training centres under the State Governments varies from State to State extending from 4 months to 10. They suggest, therefore, that the need for having uniformity in the duration as well as the courses of training should be emphasised on various State Governments so as to avoid different levels of efficiency amongst the personnel trained in different State Centres.

5. The Committee recommended that the Ministry should review the position regarding expansion of training facilities both at the Fisheries Training Centres in the States and in the Central Institute of Fisheries Operatives and its Sub-stations so as to have a coordinated approach in the matter. If the intention of the Ministry is that the training facilities for larger vessels should be concentrated in the Central Institute and its sub-stations, this could be clearly pointed out to the State Governments concerned so that there is no duplication of training facilities. Moreover, keeping in view the need to train up the personnel estimated to meet the needs of Fisheries development anticipated, the Ministry should carry out expansion in the training facilities for Fisheries Operatives ensuring at the same time that the maximum utilisation is made of the existing facilities in the various centres and the Institute and its Sub-stations.

6. The Committee hope that the persons trained in the Fisheries Training Centres in the States and in the Central Institute of Fisheries Operatives and its Sub-stations will be gainfully employed in the trade in which they have been trained.

7. The Committee are happy to note that the Institute gives a three month preparatory training to the new entrants. They trust that this facility will be continued and made a part of the training course so that more and more fishermen can take advantage of the training imparted at the Institute.

8. The Committee agree with the observations of Mr. Hans. Tams. Lyche, a Norwegian Fisheries Training Expert, who prepared the Project Report on the establishment of the Institute that the students at the Operatives Training Institute should be recruited from among

the fishermen and as far as Master Fishermen, Engine Drivers and Gear Technicians are concerned, that would rather be a necessity. They would urge that while admitting candidates preference should be given to young fishermen having background education upto 8th standard. The States may be requested to give wide publicity through fisheries schools about the facilities for training available at the Institute.

9. While the Committee are glad to note that the Institute has started training courses for Shora Mechanics, and Radio Telephone Operators, they fail to understand why it could not be possible for the Institute to ascertain well in advance the firm requirements for such personnel from the States before finalising arrangements for starting the courses. They hope that the Institute would ensure that the intake capacity for these two categories of personnel is fully utilised.

10. The Committee note that the Ministry of Transport has not accepted the suggestion with regard to modifications in the Rules and Regulations Applicable to Motorised Fishing Vessels, 1959 on the ground that "relaxations will, however, be considered if any difficulties are experienced and exemption granted in suitable cases". The Committee do not know whether the Skippers and owners of vessels concerned are aware of the decision of the Ministry of Transport as otherwise it is unlikely that they will seek relaxation.

11. The Committee are surprised that no specific requirements of the teachers from the States to be trained in the Institute during each year appears to have been ascertained. On the other hand when the course was started in April, 1967 on an ad hoc basis, only 3 trainees were trained as teachers at the special request of the concerned State Governments. In these circumstances the Committee are doubtful whether it will be possible for the Institute to have even 10 candidates for the Teachers Training Course. They would like this matter to be specifically taken up with the State Governments and thereafter a review of the scheme made in order to see if it would be worthwhile to continue the course.

12. The Committee note that the present syllabii for various courses conducted at the Institute were drawn up in 1964. They would suggest that the syllabii may be reviewed periodically in the light of the experience gained. The first such review may be conducted in 1969 and thereafter on a quinquennial basis.

The Committee would also suggest that this review may be undertaken by a Study Team which should include representatives of State Governments, the Mercantile Marine Department, the industry and other interests engaged in the development of fishery industry.

13. The Committee are unhappy to note that the intake capacity for various courses conducted at the Institute has not been fully utilised ever since the inception of the Institute. Considering the present

requirements of fisheries personnel for the developmental activities of the fishery industry the Committee cannot over-emphasise the need for fuller utilisation of the capacity. They suggest the Ministry may examine this matter along with their proposals for setting up additional training units and for strengthening the Central Institute of the Fisheries Operatives, Ernakulam and take suitable remedial measures in consultation with the State Governments and the fishery industry.

14. The Committee note that the present teacher-student ratio in the Institute is satisfactory. This would be maintained.

15. While agreeing that in view of the specialised nature of training and equipment etc. the cost per student may not be considered very high, the Committee would like to point out that if the training capacity at the Institute is fully utilised the cost per trainee can be further reduced. They would also urge the Ministry to work out a formula for determining the cost of training per trainee at the Institute.

16. The Committee trust the position with regard to the rate of stipends will be reviewed in the near future in consultation with States as the rate was fixed long ago and needs revision in view of the rising cost of living prevailing in the country.

17. While agreeing that the Institute needs vessels equipped with special type of equipment required for training in all principal methods of fishing, fish findings, navigation and seamanship, the Committee are not convinced of the need to acquire new vessels exclusively for the Institute. The Committee are of the view that arrangements could have been made with the State Governments and other fisheries institutions for fitting their vessels with the required type of equipment when required. They suggest that future requirements of vessels for this Institute as also for other fisheries institutions of the Government of India should be carefully examined in order to avoid large-scale expenditure, wherever feasible.

18. The Committee are glad to note that the rules for the recruitment and promotion of majority of Class I and Class II posts have been finalised and rules for other posts are being finalised in consultation with the Union Public Service Commission/Ministry of Home Affairs etc. They trust that the rules relating to the other posts will be finalised without delay and it will be possible for the organisation to recruit suitable persons and fill up the vacant posts of gazetted officers early.

19. The Committee hope that the non-gazetted posts which have since been cleared for recruitment will be filled up shortly. The Committee need hardly emphasise that keeping a large number of posts

vacant especially in training institutes is detrimental to the interests of the institute itself as the training programme is upset thereby delaying the entire training programme.

20. The Committee hope that the suggestion of the Director of the Institute for the enhancement of pay scales so as to attract suitable candidates will be considered at the appropriate time so that there is no dearth of suitable persons for purposes of imparting training to the trainees for Fisheries Operatives.

21. Since the Central Institute of Fisheries operatives is the leading institution for training operatives of various skills required by the developing fishery industry of the country, it is desirable that it should publish its own annual report. The Commitee hope that the Ministry will ensure the publication of an annual report beginning from the next financial year.

22. The Committee feel that the working of any organisation or training institute needs to be evaluated at certain intervals. They suggest that a review of the functioning of the Institute may be made after the financial year 1968-69. Thereafter an evaluation of the working of the Institute may be made on a quinquennial basis on the lines suggested by the Estimates Committee in para 9 of their 76th Report on the Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture) Indian Agricultural Research Institute, New Delhi.

23. The Committee note that year after year there have been large savings. They also note that in 1966-67 the acquisition of a new fishing vessels was put off and the Swedish Vessels for which Provision of Rs. 26 lakhs was made in the Capital Account for the year 1967-68, are likely to be received only in August/September, 1968. This clearly indicates lack of advance planning. The Committee would stress the need for a more realistic financial planning so that disproportionate savings are avoided in future.

(5) CENTRAL INSTITUTE OF FISHERIES EDUCATION, BOMBAY

(6) DEEP SEA AND OFF-SHORE FISHERIES ORGANISATION, BOMBAY

Object : The objectives of Deep Sea Fisheries Organisation are :—

A. (1) Chartering the fishing grounds;
   (2) Determination of the type of fish available.
   (3) Examination of the type of fish available.
   (4) Assessment of the suitability of different types of Fishing vessels.
   (5) Assessment of the suitability of the different types of fishing gear and equipment especially nets.

B. To train personnel for fish operations on modern lines.

C. To test the commercial possibilities of the deep sea fisheries and make available the requisite data and information to those concerned so as to help in guide and expansion of fishing industry.

ESTIMATES COMMITTEE'S OBSERVATION :

1. The Committee note that of the three great Oceans of the world, the Indian Ocean is the least exploited one, the exploitation amounting to only about 2 million tonnes per annum. They realise the great potentiality of the Indian Ocean and they will attribute its low exploitation to lack of precise knowledge regarding the exploitable fisheries and at the low fishing effort. In the opinion of the Committee, although there is scope for intensifying exploitation in the in-shore belt, the main prospect will be in the exploitation of the off-shore and deep-sea resources, which are not being exploited at all at present. The Committee would like the Deep Sea Fishing Organisation to prepare comprehensive scheme for effective exploitation of the deep sea fisheries for the period ending 1970-71 and plan the strategy for its execution in such a manner that quick results are achieved in the minimum possible time.

2. The Committee would suggest that close liaison and coordination should be maintained with the Central Marine Fisheries Research Institute, which provides the basis for work to the Deep Sea Fishing Organisation and Central Institute of Fisheries Technology, whose functions in certain spheres appear to be on lines similar to those of the Deep Sea Fishing Organisation. The Committee would also stress the desirability of fostering close relations with other Institutes set-up by Central and various State Governments. Close coordination has also to be maintained with the industry which will ultimately use the results achieved by the Deep Sea Fishing Organisation for commercial exploitation.

3. The Committee are unhappy to note that it has been possible for the deep Sea Fishing Organisation to survey an area of 19,543 sq. miles only out of the total area of 73,820 sq. miles within the off-shore belt (10 to 40 fathoms) allotted for the purpose since the inception of the Organisation in 1946. As the programmes for survey are drawn up and revised every six months on the basis of availability of resources, the Committee feel that either the targets of survey set down for each station were unrealistic, or the Organisation have failed to achieve its basic objective, namely, charting of new fishing grounds. The Committee have no doubt that had the Deep Sea Fishing Organisation achieved this important objective, the production of fish would have been much more than what it is at present. The Committee would stress that the working of the Deep Sea Fishing Organisation should be geared up in such

a manner that each station is made responsible for conducting survey work in a specified area during a specified period. It should be the responsibility of the stations to fulfil the targets within the stipulated period. The reasons for shortfall, if any, in the achievement of the targets should be thoroughly examined and proper remedial steps taken by the Ministry.

In this context, the Committee note that while vessels from foreign countries are exploiting large fishing areas in the Indian Ocean, such areas are practically unexplored and unexploited by Indian nationals. The Committee hope that as and when larger vessels are made available to the organisation, exploratory fishing would be conducted in the deep sea belt also.

The Committee are unhappy to note the way in which the development of fisheries in the Bay of Bengal has been handled. It appears that initially no proper survey was made about the fisheries in the Bay of Bengal and the deep sea fishing operations undertaken by the Government of West Bengal on a commercial scale were unproductive. The Committee note that the Ministry have now drawn up a pilot project for the development of fisheries in West Bengal with Canadian assistance. The project report, *inter alia* includes deep sea fishing in the Bay of Bengal with the help of three large vessels of 100 ft. to 120 ft. They also note that the project report is under consideration of the Canadian Government. The Committee would like the Ministry to complete the pre-investment survey expeditiously so that activisation of the project may not be delayed. The Committee would also like the Ministry to examine whether they could take up the work independently in case there is difficulty or uncertainty about the Canadian assistance.

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Now that the Central Marine Fisheries Research Institute has gone under the control of the Indian Council of Agricultural Research, the Committee should like the Ministry to ensure that the co-ordination between the Deep Sea Fishing Organisation and the Central Marine Fisheries Research Institute is not in any way disrupted. They hope that the research programmes of the Deep Sea Fishing Organisation will continue to be drawn by the said Institute in consultation with the Fisheries Research Committee. The Committee would also like to emphasise the necessity of completion of the research programmes within the stipulated time and maintenance of close co-ordination and liaison with the various sub-stations..

The Committee are constrained to note that the strength of the fishing fleet at the disposal of the Deep Sea Fishing Organisation has been dwindling from year to year. They are all the more unhappy to observe that the Government seem to have taken no steps to keep up this strength even when they were aware that this strength in itself was considered to be inadequate. The Deep Sea Fishing Organisation cannot be expected to carry out the exploratory work, which is its objective, smoothly and efficiently without adequate fishing fleet. This may be one of the reasons why the Deep Sea Fishing Organisation is far behind the targets laid down for exploration. The Committee would like the Government to take energetic steps to acquire the necessary fishing vessels as early as possible, the expenditure for which has now been sanctioned. In this connection, the Committee would also like to draw the attention of the Government to the recommendation contained in para 3.29 of their Thirty-sixth Report (Fourth Lok Sabha) on the Ministry of Food, Agriculture, Community Development and Co-operation (Department of Agriculture), Central Marine Fisheries Research Institute, Mandapam Camp.

8. The Committee would also like the Ministry to investigate whether it is correct that the exploratory fishing activity of the vessles of the Organisation is confined to areas which are too well-known, as has been alleged in the Memorandum furnished to the Committee reproduced at para 2.5 of the Report.

9. The Committee note the number of fishing vessels proposed to be acquired during the period ending 1970-71 for fisheries development in the country. They are, however, constrained to observe that not a single fishing vessel has been acquired so far since 1966-67. They are also unhappy to note that there has been an inordinate delay in deciding whether the vessels should be imported or manufactured indigenously. They deplore the complacency shown by the Ministry as well as DGS&D in the matter so much so that they have not yet taken necessary powers to negotiate with the consortia about the production of fishing vessels in India. The necessity of executing such important projects with a sense of urgency and seriousness needs no emphasis. In the circumstances, the Committee would like the Ministry to take effective and immediate steps to finalise the whole question without further delay. They would also like the Ministry to consider in advance the necessary steps that should be taken in case negotiations with the consortio fail, as, in such an eventuality, there is likelihood of further delay which will adversely effect the development programme.

10. The Committee feel that chartering of foreign fishing vessels should not be encouraged as a rule because the cost of charter, which works out to about 30 per cent to 40 per cent of the cost of the vessel (trawler), appears to be prohibitive. They suggest that instead of chartering the vessels, effort should be made to purchase the vessels outright.

11. The Committee also feel that the proposal to charter the vessels from the USSR merits close and careful consideration. In the opinion of the Committee, harbour and shore facilities in the Indian ports should not be given normally to any of the foreign fishing vessels. Giving of harbour and shore facilities to foreign fishing vessels will further accentuate the difficulties being experienced by the Indian vessels due to inadequacy of such facilities and will be detrimental to interests of Indian Fishing Industry and the country. Adequate safeguards have also to be taken to ensure that this does not affect the development of Indian fisheries particularly fish catches in deep sea in any manner. The Committee would expect the Government to examine such proposals in all details keeping a special watch over the interests of the country, before coming to any conclusions in the matter.

12. The Committee appreciate that the main job of the vessels of the Deep Sea fishing Organisation is exploration. As such, fish catches of those vessels cannot be expected to be as high as those of commercial Fims. They, however, feel that efforts can be made to have increased catches of fish while conducting exploratory work, ensuring at the same time that the exploration work of the Organisation does not suffer in any manner.

13. The Committee note the working of some of the vessels available with the Deep Sea Fishing Organisation. They are, however, distressed to find that the repairs costs of these vessels are very high. As a matter of fact, in some cases the cost of repairs already incurred is almost double the cost of the vessels. The Committee, therefore, suggest that it should be examined whether it will be worthwhile to continue to use some of the vessels even by incurring very high expenditure on repairs or it would be advantageous and economical to have them replaced by new vessels.

14. The Committee note that the programme of training which was being conducted by the Deep Sea Fishing Organisation since 1952 has been transferred to the Central Institute of Fisheries Operatives in 1964. The Committee also note the requirement of technical personnel of the Deep Sea Fishing Organisation on procurement of additional vessels proposed to be acquired by the Government. The Committee hope that the required trained personnel will be available by the time the new vessels become available. They would also suggest that close liaison and coordination should be maintained with the Central Institute of Fisheries Operatives for the purpose.

15. The Committee would like to stress that such important project (acquiring of prototypes of exploratory vessels) should be executed with the sense of urgency as these are vital for the development of India's fisheries.

16. The Committee note that workshop facilities for running repairs of minor nature to fishery vessels are available at Cochin, Visakhapatnam and Tuticorin. They, however, feel that in view of the fact that the future development of India's fisheries depends upon larger vessels, there is imperative need to provide major repairs facilities at various ports. They also feel that adequate slip-way and dry-docking facilities have also to be provided at some of the selected ports. The Committee suggest, therefore, that the comprehensive plan for the provision of workshop, slip-way and dry-docking facilities at selected ports may be prepared and executed in a phased manner to avoid difficulties later on. The Committee also suggest that close liaison and co-ordination should be maintained with the concerned port authorities for the purpose to avoid any overlapping and duplication. They feel that such liaison and co-ordination with the Indo-Norwegian Project is also imperative as they have built quite a big workshop at Ernakulam and a slip-way is under construction there.

17. The Committee feel that the evaluation report submitted by the Joint Commissioner (Fisheries) on the working of the Deep Sea Fishing Organisation merits close and careful scrutiny. The Committee agree that the present programme of work of the Deep Sea Fishing Organisation should be (i) to cover the off-shore grounds upto 40 fathoms in areas not covered as yet; and (ii) to take up exploration of the deep sea particularly with reference to Tuna fish with larger vessels from the bases located in major ports. The Committee expect the Ministry to ensure that the above programme of work of the Deep Sea Fishing Organisation is fully implemented.

18. The Committee also feel that there is an imperative need for regularly evaluating the work of the Deep Sea Fishing Organisation to ensure the results are commensurate with the expenditure incurred. The Committee have already recommended the periodical evaluation of the Central Fisheries Research Institutes in their earlier Reports. Similar periodical evaluation should be conducted about the working of the Deep Sea Fishing Organisation also.

19. The Committee note that the organisation set-up is adequate for the present working of the Deep Sea Fishing Organisation. In view of the fact that the larger fishing vessels are now proposed to be introduced, the Committee feel that the organisational set-up of the Organisation should be reviewed so that it could be geared up to meet adequately the expanding needs of the Deep Sea Fishing Organisation.

20. The Committee are glad to note the steps taken for giving incentives to the floating staff engaged in experimental fishing vessels. They are also happy to note that necessary steps have been taken

for revising the pay-secales of the boating staff. They hope that a scheme will soon be evovled for giving incentives to the floating staff who are engaged in exploratory vessels.

21. The Committee suggest that the financial powers of the Superintending Engineer and the Deputy Directors may be reviewed to ensure that they are adequate to carry on the work of the Deep Sea Fishing Organisation and its various off-shore Fishing Station promptly and efficiently. In this connection, the Committeee would also like to draw the attention of the Government to the recommendation contained in para 2.21 of their Thirty-Sixth Report (Fourth Lok Sabha) on the Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture). Central Marine Fisheries Research Institute, Mandapam Camp. The Committee do not view the extension activities be undertaken at present by the Deep Sea Fishing Organisation as satisfactory. Mere collection of useful information without disseminating it to the user, especially the industry, serves no useful purpose. The Committee, therefore, stress that the results achieved through the exploratory cruises and researches being conducted by the Organisation should be immediately passed on to the fishery industry so that they could put them into practical use. The Committee suggest that an integrated scheme for giving publicity to the results achieved by the various Wings of the Orgnisation may be drawn up and put into operation with the assistance of the State Governments.

22. The Committee are unhappy that owing to the non-availability of vessels , two stations started at Mangalore and Veraval had to be closed down in early 1966. For the same reasons, proposals to open stations at Paradeep and Port Blair during the Third Five Year Plan did not fructify. The Committee are not sure whether the proposal to start four new stations during the period ending 1970-71 will materialise as that proposal is also linked up with the availability of vessels. The Committee would, therefore, stress that all out efforts should be made to acquire at least the minimum number of vessels required as early as possible.

23. The Committee also urge that special efforts be made to start the station at Port Blair at the earliest possible opportunity, because of the importance and potentialities of the area for fisheries development.

24. The Committee note that there have been heavy shortfalls in expenditure during the Second and Third Five Year Plans. They need hardly emphasise that the projects for which financial provision has been made in a particular Plan period should be completed within the plan period itself, so that the necessity of spill-over of projects from one Plan to another plan may be obviated.

25. The Committee need hardly point out that the yard-stick for the development of fishery industry in any country is the number of fishing harbours and the facilities for commercial fishing it has, since large scale operation are only possible from fishing harbours. Viewed in this context, the Committee do not feel that the progress achieved so far in providing landing and berthing facilities at minor ports, is satisfactory. They recommend that the whole machinery deployed on this important project should be geared up and all-out efforts made to complete the construction of the fishing harbours already taken in hand.

26. As regards the execution of the project work by the States on behalf of the Central Government, the Committee suggested that the feasibility of further decentralising the work may be considered. The State Governments also be urged to furnish the necessary certificates with regard to scrutiny of the work as speedily as possible. In any case, the Committee feel that earnest efforts should be made to reduce the time-lag at the various stages from the date of making the proposal of the actual execution of the project, and to do away with avoidable procedural delays.

27. The Committee further suggest that the question of sheltering the mechanised fishing boats and vessels at various commercial harbours, especially during cyclones, bad weather, etc. till such time the fishing harbours are ready, should be taken up with the port authorities concerned.

28. The Committee are not satisfied with the progress of work relating to the provision of landing and berthing facilities at Bombay, Haldia, Mangalore, Tuticorin, Madras and Visakhapatnam. They regret to note that it has not been possible to start construction work at any of these sites so far. They are also unhappy that the Budget Provision of Rs. 200 lakhs for 1967-68 was cut down to Rs. 100 lakhs, which should have an adverse impact on the pace of construction. The Committee do not expect that with the present tempo of work, it will be possible to utilise fully the amount tentatively provided for the purpose during the period ending 1970-71. The Committee, therefore, stress that such project should be given the attention they deserve and executed expeditiously.

29. The Committee note the Plan of Operation for Pre-Investment Survey of Fishing Harbours under the auspices of United Nations Development Programmes (Special Fund).

30. The Committee agree that pre-investment Survey is an essential pre-requisite for the development of a harbour. They note that the progress in the construction of fishing harbours in India has been slow due to the non-availability of consultant engineers in the country who could prepare the pre-investment survey reports. The Committee suggest that sufficient number of Indian engineers and technicians should be attached with their foreign counterparts, who are

expected to prepare the pre-investment reports under the auspices of the United Nations Development Programmes, so that they could be properly trained to work independently in the future development of not only fishing harbours but commercial harbours also.

31. The Committee trust that the whole project would be executed in close coordination and collaboration with the concerned State Governments and the State Port Authorities. The Committee would also stress that in the cases of sites where pre-investment surveys have been completed, there should be no delay in starting the construction work.

32. The Committee are surprised to learn that no specific targets and time-limits have been laid down for completing the construction of fishing harbours with the result that out of the two fishing harbours taken up for construction during the second Five Year Plan, none could be completed during that Plan and only one could be completed during the Third Five Year Plan. Although consturction of 16 additional harbours was taken up during the Third Five Year Plan, all had to be carried over. In this connection, the Committee are distressed to note that, the estimates of expenditure are likely to go up owing to the delay in completion of the construction work. The Committee would therefore, urge that specific targets and time-limits should be laid down for all such construction work in future. They also suggest that the whole procedure of constructing fishing harbours should be streamlined so as to bring about improvements and quick results.

33. The Committee note that the States were not very enthusiastic in the past about the provision of landing and berthing facilities as half the money would have to be found by them. Now that the Central Government has undertaken to meet the entire expenditure on the provision of Landing and Berthing facilities at Minor Ports, the Committee hope that the pace of construction of fishing harbours will be accelerated.

34. While noting that the technical and constructional know-how and the technical personnel required for constructing fishing harbours are available in the country, the Committee would stress the need for developing technical know-how as regards pre-investment survey also in the country. They hope in due course dependence on foreign experts in this particular direction will be totally eliminated.

35. The Committee would like to stress that the work in connection with the construction of fishing harbours should not be allowed to suffer due to lack of requisite equipment. They suggest that inescapable and immediate demands for efficient execution of the projects should be noted down and efforts made to get them on

loan from port authorities. Failing this, these may be obtained under some foreign aid programmes. At the same time concerted efforts should be made to develop the equipment indigenously.

36. The Committee are surprised to note that the Ministry do not have separate figures of loan and grants given by the Central Government to the States during the Second and Third Plan periods with regard to handling and berthing facilities. In the absence of such statistics the Committee can only conclude that the control of the Ministry in regard to the proper utilisation of the funds placed at the disposal of the State Governments was ineffective.

37. The Committee are distressed to note that there are heavy shortfalls in expenditure both on the Second Five Year Plan and Third Five Year Plan schemes. They need hardly emphasise that coordidinated efforts should be made to complete the schemes within the Plan period itself and avoid spill over of the projects from one Plan to another. They suggest that necessary corrective measures should be taken immediately so as to ensure that the schemes included in the next plan are completed within the stipulated time and funds provided for the purpose are utilised properly and fully.

38. The Committee are glad to note that the Government propose to go ahead on their own with regard to the work on the five major ports rather than wait for the World Bank assistance. The Committee hope, however, that Government would be able to secure the necessary assistance from the World Bank as soon as the work of the Study Team, which is going round the ports, is completed.

(7) INDO-NORWEGIAN PROJECT, ERNAKULAM :

Object: The objects of the projects included :—

(a) to increase in the return of fisherman's activities ;

(b) distribution of fresh fish and fish products;

(c) improvement of health and sanitary conditions of the fishing pools;

(d) in general higher standard of the community of the area.

ESTIMATES COMMITTEE'S OBSERVATIONS :

1. The committee note the objectives laid down in the various Agreements signed by the United Nations Government of India and Government of Norway for the development of India's fisheries.

2. The Committee appreciate the pioneering work and efforts made by the Indo-Norwegian Project in India by providing material, equipment and expert knowledge for intensive development of fisheries, facilities for training and experimental and exploratory

fishing etc. The Committee agree that the most important achievement of the Project is the catalytic effect it has had on the development of the marine fisheries along the South-West coast of India.

3. Since two of the objectives of the project were (i) an improvement in the health and sanitary condition of the fisherman and (ii) in general, a higher standard of living for the community in the project area, the Committee consider, it would have been desirable to set apart specific sums for improvement of housing conditions, drinking water, education, transport, etc. of the fishermen of the area so as to bring about an improvement in their social and economic condition.

4. The Committee suggest that a detailed study may be undertaken by the Ministry with a view to see to what extent the objectives laid down in various Agreements have been achieved and the impact of the working of the Indo-Norwegian Project on the development of India's fisheries.

5. The Committee note the organisational set-up of the Indo-Norwegian Project. They further note that during the last 15 years of the life of the Project, there have been as many as 11 Directors from the Norwegian side and that there have been frequent changes in other Norwegian technical personnel. The Committee need hardly point out that frequent changes in the technical personnel, and especially of the Director, have a deleterious effect on the smooth and efficient functioning of an institution. The Committee trust that suitable measures will be taken to remedy the situation.

6. The Committee further feel that there is need for the Norwegian Director and the Indian Director to work in close cooperation so as to ensure smooth administration of the Project. Close liaison and coordination between the Centre and the concerned State has also to be maintained for the purpose.

7. The Committee suggest that the Indian technical personnel should be progressively associated with their Norwegian counterparts so as to enable them to take over the administration and operation of the Project after the termination of the present arrangements.

8. The Committee do not feel convinced by the reasons advanced by the Government for the heavy short-falls in the expenditure incurred by the Indo-Norwegian Project in 1964-65 and 1965-66. They would stress that the programmes of the Project, for which budget provisions have been made, should be executed with a sense of urgency, unless there are circumstances which are beyond the control of the Project Authorities.

9. The Committtee note that about a third of the expenditure from Norwegian side has been incurred on the salaries and allowances of the Norwegians since the inception of the Indo-Norwegian

Project. In the opinion of the Committee, more expenditure should have been incurred on items such as, craft and gear, equipment and other machinery and other development schemes. The Committee suggest that necessary corrective steps may be taken in this behalf.

10. The Committee feel that there is a need for a regular evaluation of the work of the Indo-Norwegian Project to ensure that the results are commensurate with the expenditure involved.

11. The Committee note some of the research activities undertaken by the Indo-Norwegian Project. They would stress the desirability of fostering close liaison and coordination between the Project, Central Marine Fisheries Research Institute and Deep Sea Fishing Organisation as well as other Central and State Research Institutes to avoid any inadvertent duplication and overlapping. The Committee would also stress that the Project should strive to establish close links with the fishery industry so that the industry could exploit the results achieved by the Project.

12. The Committee hope that 'purse-seining' survey of the tuna fishery will be undertaken at the earliest possible opportunity so that India could also exploit this important species of fish which is now being exploited by Japan and USSR in the Indian Ocean.

13. The Committee note the present position of the vessels received so far by the Indo-Norwegian Project under various Agreements. They are, however, un-happy to observe that performance of some of these vessels has not been very satisfactory and the repairs costs on them have been quite heavy. In the opinion of the Committee, it should have been possible for the Government to make some sort of arrangement with the Norwegian authorities to check up the suitability or other-wise of these vessels in the Indian climatic conditions. This would have resulted in the saving of three wooden vessels which had to be decommissioned as soon as they arrived here owing to ivy rot. In the opinion of the Committee while importing equipment for fisheries development, better knowledge of local climatic and other conditions of the Indian authorities should be utilised to avoid such cases.

14. The Committee are unhappy to note that some of the Projects vessels have not been adequately and properly manned, with the result that the fishing operations have been adversely affected. The Committee would stress the need for accelerating the training programmes in the Indo-Norwegian Project as well as in the Central Institute of Fisheries Operatives so that there may not be any dearth of certified bosuns for the Project's fishing vessels. The Committee, however, note with satisfaction that it is proposed to improve the

manning and operation of the Project's vessels and to commercialise the operation of the vessels by giving proper incentives to the crew. The Committee also stress the desirability of keeping the repairs costs to the barest minimum. They also hope that shortcomings noted in the performance of these vessels will be removed as early as possible. So far as the pay-scales and incentives to the floating staff is concerned, the Committee would like to draw the attention of the Government to the recommendation contained in para 3·7 of their Fortieth Report on the Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture) —(i) Deep Sea Fishing Organisation, Bombay; and (ii) Landing and Berthing Facilities.

15. The Committee commend the efforts made by the Indo-Norwegian Project in introducing the mechanised fishing boats. The Committee have already stressed the necessity of reducing the cost of the mechanised fishing boats, so that the poor fishermen could afford to purchase them and take advantage therefrom in para 2·23 of their Thirty-Eight Report on the Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture) —Central Institute of Fisheries Technology, Ernakulam. They expect that the Indo-Norwegian Project would also take concerted steps in this direction.

16. The Committee would stress the imperative need for close liaison and coordination between the Indo-Norwegian Project and the Central Institute of Fisheries Technology so far as the design of the fishing boats to be manufactured by the Project authorities is concerned. They would like the Project authorities to examine the feasibility of using the design of the mechanised fishing boats evolved by the Central Institute of Fisheries Technology, which is liked by the fishermen, for construction of mechanised fishing boats in future.

17. The Committee desire that the feasibility of undertaking manufacture of marine diesel engines in India on the basis of the design of the engines which are now being imported from Norway, may be considered in case such engines have proved better than the indigenously manufactured ones.

18. The Committee are glad to note the development activities under taken by the Indo-Norwegian Project at Cochin/Ernakulam Mandapam, Cannanore and Karwar. They hope that the construction of the slipway at Cochin and Jetty at Mandappam will be completed as early as possible. They also hope that other items of work carried over from the Third Supplementary Agreement to the Fourth Supplementary Agreement will be completed without further delay.

19. The Committee are glad to note that the training programme launched by the Indo-Norwegian Project is being executed in close collaboration with the Central Institute of Fisheries Operatives and the concerned State Governments. They suggest that the overall requirements of the industry, various Research Institutes, etc. may be kept in view so that the facilities available for training in the Project could be suitably augmented. In this connection, the Committee would like to draw the attention of the Government to the recommendation contained in para 2.19 of their Forty-First Report on the Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture), Central Institute of Fisheries Operatives, Ernakulam.

20. The Committee hope that the contemplated courses of training for processing, technicians freezing plant mechanics, etc. will be started by the Project as early as possible.

21. The Committee feel that adequate publicity and demonstrations can go a long way in bringing the home in a visual form the results achieved by the Project to the users. They suggest that the feasibility of bringing out Bulletins, News letters, etc. and articles in various Fisheries Journals on the working of the Project may be considered. They also desired that demonstrations on improved methods of catching, processing, cleaning of the premises, etc. may be arranged by the Project for the benefit of the fishermen and industry.

22. The Committee are glad to note that modern distribution and marketing centres for sale of fish have been established by the Indo-Norwegian Project at Alwaye and the Project's premises at Cochin. They also note that the Project intends to start such centres at Ernakulam and Bangalore as well. The Committee would like the Project Authorities to draw up a plan for opening such centres at various places in a phased manner. The Committee would also suggest that the economics of such centres should be worked out so as to ensure that they do not incur any losses. It would be better if these centres are run on no-profit no-loss basis.

23. The Committee note that the Indo-Norwegian Project has been authorised to enter the export filed in order to utilise fully the capacity of the ice-*cum*-freezing plant set up by them at Cochin. They also note that initially it was decided that the processing and freezing should be confined to the catches of the vessels of the Indo-Norwegian Project alone but subsequently they have been authorised to utilise the catches of the vessels of other Central Government institutes located at Cochin and also to purchase fish from local market. The Committee feel that while it is desirable that the capacity of the ice-*cum*-freezing plant should be fully utilised entry into the export market by Indo-Norwegian Project, which

is devoted mainly to research and training, is outside its objectives. If, however, Government considers it necessary to export the frozen products processed by the Indo-Norwegian Project on a long-term basis, the Committee suggest that the desirability of putting such operations under a commercial organisation may be considered.

24. The Committee are glad to note that the Indo-Norwegian Project has set-up a modern ice-*cum*-freezing plant at Cochin. They hope that the plant will serve as a model plant and it will be fully utilised for training-*cum*-demonstration purposes. For this purpose, representatives from the industry should be invited regularly to see the working of the plant so that similar working methods could be adopted by them.

The observations made by the Estimates Committee in respect of the Research Institutes speak eloquently of the deficiencies in respect of research administration specially in the field of proper coordination between various research institutions on the one hand and poor educational facilities available for the needs of the country to tap to the maximum the available resources in fisheries. The observations of the Estimates Committee on Deep Sea Fishery Organisation, Bombay, state "the Committee would suggest that close liaison and coordination should be maintained with the Central Marine Fisheries Research Institute, which provides the basis for work to the the Deep Sea Fishing Organisation, and Central Institute of Fisheries Technology, whose functions in certain spheres appear to be on lines similar to those of the Deep Sea Fishing Organisation. The Committee would also stress possibility of fostering close relations with other institutions set-up by the Central and various State Governments. Close coordination has also to be maintained with the industry, which will utlimately use the results achieved by the Deep Sea Fishing Organisation for commercial exploitation."

Dr. Baini Prashad who was the Director of Survey of India in his memorandum "post war development of Indian Fisheries in the year 1943" suggested as follows:

"I recommend that a Central Fisheries Research Institute should be established by the Government of India on the lines similar to those of the Agricultural Research Institute at New Delhi. The Veterinary Research Institute at Mukteshwar and Izat Nagar and Forests Researh Institute at Dehra-dun. Agriculture including veterinary work and forestry are like fisheries transferred subjects : but the Government should maintain fully equipped and well staffed research institutes for the study of the problems connected with those subjects and there seems to be no reason why the development of Indian fisheries, which in their importance are second only to agriculture and animal husbandry should not be taken up along similar lines".

A great need for establishment of National Fisheries Research Institute on the lines and status of Indian Agricultural Research Institute, New Delhi, Indian Veterinary Research Institute, Izatnagar, National Dairy Resarch Institute, Karnal, Forest Research Institute, Dehradun is keenly felt under the present conditions and circumstances. Fisheries has been recognised as an important sector of Indian economy with great possibility of extension and better nutritional food content. Such an institute may be established and given the status of a University while under the overall control of the Indian Council of Agricultural Research. The situation of such an institute offers no difficulty as the Central Institute of Fisheries, Education at Bombay is already functioning with the assistance of F. A. O. and can be converted with some modifications into such an institute. The organisational structure of such an institute should be carefully worked out by an expert body. The administrative pattern of the institute may, however, correspond to any of the National Institutes.

The present Central Research Institute of Fisheries should work under the National Fisheries Research Institute and be geared up to function more efficiently in respect of research, education and training while maintaining their organisational structure as at present. In order however, to avoid duplication and over-lapping, the research institutes at present working may impart under-graduates instruction like Diploma and Certificate of craft courses while the Central institute will devote itself for post-graduate course, courses to various branches of fisheries research, education and training. The National Institute of Fisheries Research should take up all India problems and problems of basic fundamental nature while the institutes under it should concentrate on local and regional problems and devote maximum attention to problem of fishery research of direct industrial/commercial significance.

I. C. A. R. should control and coordinate research work in fisheries carried out at the National Institute and the State Research Institutes in Fisheries. The National Research Institute should follow the same procedure and methods as are being adopted by the agriculture and other National Research Institutes.

Extension

Fisheries extension work is in a more backward condition than research or training. Neither in the field of inland fisheries nor in the field of better exploitation of marine fisheries resources, we have been able to make improvements by introduction of new methods of technology chiefly owing to absence of a satisfactory extension organisation at all levels national, State, district, village.

The extension work in fisheries is as important as in agriculture and animal husbandry. The results of research need to be quickly transmitted to the industry so as to increase the productivity and efficiency of the industry and maximise production. The research institutions should, therefore, train extension workers in all branches of fisheries' industry. Recently the 'Financial Express' made a very pertinent remark about Government's attitude towards fishery "but more disturbing than this is the anxiety of the Government to treat the fishing industry more as a branch of the Government's welfare activity than a vital channel for meeting the food requirements of the growing population and bringing prosperity to the fishermen". The Estimates Committee also have stressed the importance of extension in their 36th Report (4th Lok Sabha) which states as follows:

"The Committee consider it unfortunate that as a measure of economy the 10 fisheries extension units started by the Ministry in 1956-57 had to be wound up on 31-3-1967. Now that the Government is considering the question of strengthening extension work, the Committee would stress the need for estabishment of Central Government. Extension Units at the earliest possible opportunity wherever necessary. They would also recommend that a scheme may be worked out for which close liaison and coordination could be maintained between Central Extension Units and State Extension Units on the one hand and between State Extension Units *inter-se* on the other. "

The Fisheries Division at the Centre therefore, must be strengthened and have an Extension Director to look after quicker and speedier transmission of the results of the research at the Central Institute to the States and also enthuse them for greater activity in addition to providing supervision and guidance.

Development

Fisheries development in India is still in its infancy. The annual production of fish in India reached about 1.34 million tonnes in 1965 of which about 62% was obtained from the sea. The quantity is relatively small compared to the potentiality of seas and oceans around India and her vast inland water areas. Of the three great Oceans of the world, the Indian ocean is the least exploited one, the exploitation amounting to only about 2 million tonnes per annum as against 18 million tonnes from the Pacific & 25 million tonnes from the Atlantic Oceans. While the world production of fish which was more or less static at 21 million tonnes till 1948 doubled by 1961 and has already exceeded 52 million tonnes by 1966. India's contribution to sea post production has been on an average 1 million tonnes annually.

As a source of food fisheries stand almost at par with animal husbandry for providing animal protein requirements of our people. In view of the rapidly increasing population and the urgent necessity of improving and increasing food supply in the country, exploitation and development of fisheries requires serious attention. This sector has an immense potentiality though unexploited. Further, there is a great scope for export of fisheries and its produce. These can be fully tapped under the scientific processes like freeze drying whereby the produce retains all the qualities of fresh material. A statement showing item-wise export of marine products from India is attached.

Item-wise Exports of Marine Products from India 1960-1967

Q—Qty in '00 tonnes.
V—Value in Rs. lakhs.

		1960	1961	1962	1963	1964	1965	1966	1967
1. Frozen Frawns	Q	12.11	14.63	22.38	39.67	58.70	70.28	87.83	111.77
	V	58.66	73.67	108.20	212.04	315.18	414.22	887.92	1298.34
2. Canned Prawns	Q	3.19	6.22	9.70	12.31	10.74	11.43	15.23	21.90
	V	17.84	42.23	95.59	75.75	69.92	95.06	186.57	312.30
3. Frozen Froglegs	Q	4.08	2.49	3.91	5.13	3.32	4.43	5.57	7.86
	V	15.22	12.13	2.30	31.92	16.50	26.93	55.76	88.17
4. Frozen Lobster Tails	Q	..	..	0.40	0.53	0.41	1.12	0.81	1.28
	V	..	..	2.26	3.13	3.71	12.74	14.74	23.57
5. Frozen Crab Meat	Q	..	..	..	..	..	0.01	0.01	0.01
	V	..	..	..	..	..	0.04	0.08	0.02
6. Shark Fins and Fish Maws	Q	2.98	2.92	3.49	3.41	3.78	2.44	1.39	2.94
	V	20.74	22.39	34.42	30.51	28.82	20.32	13.40	37.09
7. Dried Prawns	Q	..	..	..	28.09	30.09	17.02	14.63	15.37
	V	..	..	..	93.25	89.97	54.47	52.71	89.35
8. Dried Fish	Q	102.01	88.04	39.63	87.04	101.73	44.31	65.53	51.47
	V	206.65	138.45	45.50	137.21	157.86	65.22	132.46	132.38
9. Frozen Fish	Q	..	..	..	0.11	0.03	0.08	0.02	0.01
	V	..	..	..	0.37	0.11	0.30	0.25	0.12

10. Fist Pickles	Q	..	..	..	0.06	0·09	0.05	0.05	0.03
	V	..	..	..	0.38	0.58	0.33	0.75	0.24
11. Prawn Powder . . .	Q	..	..	..	2.55	5.11	1.04	0.81	1.16
	V	..	..	..	0.84	1.26	0.66	0.53	0.64
12. Fish Bones	Q	..	..	..	0.01	0.08	0.09	0.17	0.02
	V	..	..	..	0.11	0.19	0.37	0.50	0.26
13. Turtle meat	Q	..	..	..	0.09	0.11	0.01	0.02	0.02
	V	..	..	..	0.81	0.58	0.12	0.60	0.52
14. Beach Damer . . .	Q	..	..	..	0.03	0.01	0.25	0.22	0.38
	V	..	..	..	0.07	0.02	0.21	0.40	0.44
15. Sea Shells . . .	Q	1.02	0.44	0.11	0.05	..	0.02	0.04	..
	V	4.09	1.15	0.34	0.06	..	0.04	0.80	..
16. Prawn Pickles	Q	..	..	..	..	0.01	0.01	0.02	0.04
	V	..	..	..	..	0.03	0.03	0.12	0.30
17. Fish Oil	Q	..	..	..	..	..	0.69	0.49	0.50
	V	..	..	..	..	..	0.66	0.60	0.73
TOTAL .	Q	125.39	114.74	79.62	179.08	214.21	163.33	192.84	214.85
	V	321.20	289·92	258.61	586·45	684.73	691.72	1348.19	1984.47

NOTE ON THE DEVELOPMENT OF SEA FISHERIES IN INDIA

The Indian Ocean with the adjoining seas, e.g. the Arabian Sea and the Bay of Bengal constitute the major resources for development of sea fisheries in India. The Indian Ocean has an area of 28 million sq. miles as against 32 million sq. miles of the Atlantic and 64 million square miles of the Pacific. The world production of fish which was more or less static at 21 million tons till 1948 doubled by 1961 and has already exceeded 52 million tons by 1966. India's contribution to sea fish production has been on an average of 1 million tons annually. India has contributed more than 40% of the landings in the Indian Ocean. The Indian Ocean, however, produced only 2 million tons of fish in 1964 as against 18.1 million tons from the Atlantic and 25.4 million tons from the Pacific. The rate of development of fisheries in India during the first 15 years has been compared with that of other advanced countries and also countries bordering the Indian Ocean. The tables annexed would indicate that India has not been able to keep pace with the advanced countries and some of the countries bordering the Indian Ocean have shown a higher rate of increase. Considering this great emphasis is being laid on developing the sea fisheries and the following aspects are receiving attention.

Development of sea fisheries can conveniently be divided into (1) the coastal waters; (2) the middle waters; and (3) deep sea. The coastal waters are exploited by indigenous craft and gear without power and small mechanised boats which go out to fish in the morning and come back with the catch in course of the day. The small mechanised boats have proved useful in India and it has been possible to introduce more than 5,000 mechanised boats by the end of the Third Plan and 1640 boats in the two years following the Third Plan. The average landing per boat is estimated to be 50 tons per annum and therefore there has been an increase in production to the extent of 300,000 tons annually. The bulk of the production, however, continues to be from the indigenous craft and gear amounting to 7 to 8 lakhs tons.

A resources survey on broad lines on the coastal areas has indicated that India could introduce 19,000 mechanised boats for the coastal fishing. The industry for its appropriate development needs—

(a) Capital

(b) Harbours

(c) Ice Factory, cold storage and transport.

(d) Suitable Marketing Organisation.

(e) Training in mechanised fishing.

(f) Service facilities for engines, boats, etc.

(g) Supplies of marine engines capable of withstanding hard service at sea.

Steps have been initiated on each of these items.

The capital which was coming mainly from the Government is now gradually being supplemented by Financing Bodies like the Agriculture Refinance Corporation. A scheme to undertake pre-investment survey of harbours has been operating and it is expected that a number of harbours will result out of this survey by actual construction being followed up after the survey. Boat building yards in the State sector, Co-operative sector and private industry have been set-up to manufacture boats and the capacity is stated to be 2,000 boats per annum. Several minor ports have already been completed and work is now in progress at 16 minor ports. The Central Government has classified the scheme as fully Centrally Sponsored. Training Institutes have been established in the Maritime States and the same are being expanded to fulfil the requirements of fishermen capable of using mechanised boats. A co-operative structure is being developed to take care of the marketing and the indigenous marine engines industry is being geared to produce the type of marine engines required by the fishermen. On the whole it can be said that the major schemes contemplated, if fully implemented, the advance in coastal fishing will be considerable in the next few years.

Middle water fishing : Excepting for one private enterprise,*e.g.* the New India Fisheries Limited there has been hardly any commercial development to utilise the resources of this area. Success of Messrs New India Fisheries has been due to a great extent by employment of Japanese key personnel and organising the industry on sound lines. In fact for effective middle water fishing the first criterion is, apart from the ancillary facilities required, to have competent men who can utilise the modern fishing craft and gear. Recently a broad survey has been conducted and indications have been received that nearly 600 thousand tons of fish can be taken out annually from part of the middle waters, *i.e.* upto 40 fathoms only. Project reports have been prepared as package programmes from several bases like Goa, Kandla, Cochin, Mangalore, Tuticorin, Bombay, Visakhapatnam and Paradeep. A Pilot Scheme has also been prepared for fishing in the Bay of Bengal. The needs for development of this industry are :

(1) Major fishing harbours to accommodate bigger vessels with slipways, repair facilities, cold storages, freezes, etc.

(2) Capital for purchase of vessels and also Working Capital.

(3) Training of persons to function as skippers, marine engineers etc.

(4) Arrangements for marketing.

(5) Supplies of boats of suitable designs.

Development of the middle water fisheries has received considerable attention lately. 5 major harbour projects are under active consideration of the Government. For expanding exploratory and commercial fishing 40 vessels have been ordered and orders are being placed for a few more. In order to expedite development, it is also contemplated to import a few vessels till the indigenous capacity for manufacture is able to meet the immediate demands. Recently, the Reserve bank of India has liberalised loan facilities to entrepreneurs to purchase trawlers. Sanction has been obtained to have special exploratory vessels capable of operating in middle waters and the deep sea. It is expected that with all these measures an effective break-through will be made in the course of the next few years in exploitation of middle waters.

Deep Sea Fishing : The most valuable deep sea fish in the Indian Ocean is tuna. The Japanese adopt a special method of capturing this and they are virtually masters in this art of fishing and no other nation has been able to compete with Japan effectively. Recently Korea, Australia, Malaysia and Pakistan have ventured into the field. They have trained fishermen and are operating boats on a trial basis because it is well known that until the men have gathered years of experience in this line, the fishing may not be economical. India has obtained the services of 2 Experts to give training in tuna capture by the Japanese method and a few persons have been trained. It has been clearly established that unless pilot operations for capturing tuna continue for a fairly long time, irrespective of the economic at the beginning, it will be difficult for any new nation to establish itself in competition with Japan. Thought will be given to this in planning our Fourth Plan from 1969-70. Meanwhile, expert service from aborad is being continued to be obtained for training of personnel.

The marine fishing industry for middle water and the deep sea is highly sophisticated on account of rigours of the sea and the unpredictability about availability of fish. Considerable Governmental support in the form of research, exploration, indication of fishing grounds incentives in various ways have been given by all major nations to the fishing industry and this is also being done by the Government of India. The exact type and quantity of incentive that is necessary has to be determined carefully by a body of experts particularly in the preparation of the Fourth Plan. It is needless to say that for protein requirements, the Indian Ocean will have to be one of the major sources available to India.

TABLE 1

Catch and Value of Fish in Major Fish Producing countries and World catch

Country	1961		1962		1963		1964		1965		1966	
	C	V	C	V	C	V	C	V	C	V	C	V
1	2	3	4	5	6	7	8	9	10	11	12	13
1. Peru	5291.0	52361	6957.5	72612	6899.0	70746	9116.5	95139	7461.9	..	8789.0	113649
2. Japan	6710.5	1103636	6866.9	1145351	6698.5	1299807	8850.7	1343311	6907.7	1500847	7077.4	..
3. China (Mainland)	5800.0	..	5800.0	..	5800.0	..	5800.0	..	5800.0	..	5800.0	..
4. USSR	3250.0	..	3616.5	..	3977.2	..	4475.8	..	5099.9	..	5348.8	..
5. USA	2931.9	361363	2972.9	395722	2777.0	376633	2647.1	388764	2724.1	445051	2514.6	..
6. Norway	1523.0	95840	1331.7	93095	1387.9	98313	1608.1	109949	2307.3	155081	2849.4	183293
7. Canada	1019.6	109200	1123.5	121139	1197.6	119321	1211.0	135057	1262.3	146295	1348.8	160197
8. India	961.0	..	973.7	..	1046.3	..	1320.0	..	1331.3	..	1367.6	..
9. Spain	988.0	136977	1107.5	165283	1125.3	194190	1203.5	212124	1341.5	261653	1357.4	282757
10. U. K.	892.6	149175	944.3	150143	960.9	155782	974.3	167541	1047.3	177572	1066.6	177511
11. Chile	429.8	14819	638.6	17349	761.9	14642	1160.9	21791	708.5	22093	1383.5	32198
12. Iceland	710.0	..	832.6	..	784.5	..	972.7	..	1199.0	..	240.3	..
Rest of the World	12892.6	..	13734.3	..	14784.5	..	15659.2	..	16109.2	..	16656.6	..
WORLD	43400.0	..	46900.0	..	48200.0	..	52500.0	..	53300.0	..	56800.0	..

C—Catch in 1000 tonnes—Nominal Catch

V—Thousand U. S. dollars ($)

Source : FAO Year book of Fishery Statistics,

TABLE 2

Catch and value of fish in countries Bodering Indian Ocean

Countries	1961		1962		1963		1964		1965		1966	
	C	V	C	V	C	V	C	V	C	V	C	V
1	2	3	4	5	6	7	8	9	10	11	12	13
1. Kenya	13.5	1789	18.4	2806	20.1	3072	20.7	2960	23.4	3469	27.9	4074
2. Madagaskar	29.0	3443	30.5	3638	35.9	4667	44.8	5027	44.1	..	52.1	..
3. Mozambique	5.4	..	5.3	..	5.5	..	6.7	..	..	..	..	..
4. Somalia	4.5	..	4.5	..	4.5	..	4.5	..	..	..	..	..
5. South Africa	657.9	20469	656.0	21251	613.9	20952	586.2	21457	663.9	22757	532.2	22692
6. Tanzania (Tanganika)	60.7	..	60.2	..	74.0	..	..	..	92.9	..	92.0	..
7. Tanzanta (Zanzibar)	10.0	1680	10.6	1750	10.2	1898	10.2	1988	10.0	2240	..	..
8. Burma	360.0	63819	360.0	63819	360.0	63819	360.0	63819	360.0	63819	360.0	63819
9. Ceylon	74.0	20273	83.9	23559	92.6	26875	101.6	29691	94.8	30916	106.4	36560
10. India	961.0	..	973.7	..	1046.3	..	1320.0	..	1331.3	..	1367.6	..
11. Indonesia	910.6	..	947.0	..	936.2	..	..	..	955.4	..	1001.4	..
12. Iran	8.0	..	8.0	..	8.0	..	8.0	..	..	..	..	..
13. Kuwait	4.8	..	4.4	..	6.8	..	..	..	..	..	..	..
14. Malaysia	181.8	47951	201.0	54583	230.8	58470	241.1	61616	253.3	66677	295.6	13699
15. Muscat & Oman	100.0	..	100.0	..	100.0	..	100.0	..	..	..	..	..

16. Pakistan . . .	319.1	..	330.5	..	345.6	..	360.6	..	379.0	139846	412.0	144070
17. Qatar	0.6	..	0.6	..	0.6	..	0.6	..	..	..	..	..
18. Saudi Arabia . .	16.2	..	18.3	..	19.6	..	20.2	..	21.7	..	23.0	..
19. South Arabia . .	47.4	..	53.8	..	55.3	..	52.0	..	52.0	..	50.0	..
20. Trucal Oman . .	12.0	..	12.0	..	12.0	..	12.0	..	..	..	..	..
21. Australia . . .	62.4	30800	67.2	34032	70.8	35624	76.6	37007	79.6	43827	88.7	47405

C—Catch in 1000 tonnes—Nominal Catch;
V—Thousand U.S. dollars (S)
Source : FAO Year book of Fishery Statistics.

INLAND FISH CULTURE

The resources in the inland sector have been estimated to be approximately 40,54,359 acres of cultivable water areas in the country including that part which remains to be reclaimed for culture purpose. Of this, about 15,19,787 acres only are utilised at present, while another about 9,59,487 acres which are readily available for culture are left unutilised. The reclaimable water area amounts to as much as 15,75,085 acres. The number of units under fish culture has not been estimated but may run into millions.

West Bengal, Madras, Maharashtra, Rajasthan, Mysore, Madhya Pradesh and Bihar, in the order mentioned, lead the rest of the country in the extent of water area presently under fish culture, while Madras, Bihar, Madhya Pradesh and Mysore have larger areas of unutilised readily cultivable waters than the rest. In total water area, Mysore, West Bengal, Madras, Bihar and Madhya Pradesh lead the rest of the country in the order mentioned. Mysore, West Bengal, Orissa, Madras and Bihar have in the order mentioned, more extensive reclaimable waters than the rest of the major States. Punjab, Assam and Gujarat have comparatively small areas under fish culture at present.

The percentage of utilisation of culturable water areas for fish culture in the country as a whole is presently only 61.30% of the readily available water area. The percentage of utilisation comes down to as low as 37.49 when the reclaimable water area is also taken into consideation. West Bengal is the only major State that utilizes almost all the readily available cultivable waters. NEFA also makes full utilisation of all its cultivable waters, but the area concerned is only 47 acres. The percentage of utilisation is also very high *i.e.* over 84% in Himachal Pradesh, Manipur, Delhi, Pondicherry, Maharashtra, Kerala and Orissa, in the order mentioned. It is also fairly high (64-72%) in Assam, U. P., Tripura and Rajasthan, and is moderate to poor 50—20% in Nagaland, Madras, Andhra Pradesh, Mysore, Gujarat, Madhya Pradesh and Bihar. It is very poor only in Punjab (6.12 %).

The production of inland fish culture in India has nearly doubled during the last 10 years and there is bright scope for expansion made possible by major developments in technique of fish culture, fish breeding and fish farm construction.

Fish culture operations follow the same pattern as agriculture except that a fish crop is obtained after two years. Intensive fish culture requires sound technical knowledge and suitable capital investment Majority of the tanks are now controlled by the Government and in many States, most of them have been transferred to Gram Panchayats. The fishermen have still no long term rights on tanks. To step up production the following steps are necessary :

(1) The system of leases in vogue needs revision to give possession of tank to fish farmers for at least 5 years at a stretch and to

settle tanks with inland fishermen cooperatives where the tanks have been transferred to Gram Panchayats or with Government.

(2) Capital loan should be made available to fish culturists and Gram Panchayts for renovation of water areas and suitable arragements made for fish seed, fish food, manure, transport and reclamation.

(3) Fishery Extension Workers to be provided for each block having 200 acres of culturable area and other service facilities for fish culture farms.

The main difficulty in stocking the available water area with major carp is the shortage of fingerlings. The total requirements of fish seed for stocking all available water areas is estimated at 1,700 crores spawn, of which the present estimated production is only 366 crores of which only 1.5% lakhs is raised through induced breeding. During the last decade top priority was assigned to the problem of breeding fish with pituitary hormone and it has been possible to evolve a suitable technique for induced breeding of major crops and already the percentage of success is over 60% in experiments conducted by the Central Fisheries Research Station. The technique was popularised through demonstration, extension training, pamphlets and movie films etc. Already there are about 100 established artificial fish breeding centres in the country producing over 3 crores of spawn in various States. It has also been possible to adopt the same technique for the breeding of the Chinese carps which have been introduced into this country in recent years. There is good scope for effecting further improvements for large scale production of pure fish seed by this technique. However, even now the bulk of fish seed supply is received through collection made from rivers when in floods, Several areas have been located where natural breeding of carps take place. These need a suitable organisation to collect and rear the spawn. During the last 4 years systematic attempts have been made in the location and augmentation of fish seed resources from rivers.

Apart from the Indian Major Carps various other exotic species have been tried. Talapia which was at one time promising has proved to be of very limited value in this regard. The Bangkok strain of common carp has, however, proved to be a valuable addition to the indigenous varieties. The grass carp has also proved to be fast growing and is capable of controlling weed infestation in tanks. The culture of the major carps and the exotic species have become very popular in recent times. The low availability of fish seeds, particularly, in the fingerling stage has been the main limiting factor in enhancing inland fish production by culture. This would require extensive fish farms for breeding fish and rearing spawn to the fingerling size.

In the IV Plan intensive fish culture, reclamation of derelict water and marshy areas for fish farming and fish seed production would receive prior attention to step up production from inland sources.

The outlay envisaged for inland fisheries in the IV Plan mainly relate to schemes for reclamation, nurseries, reservoirs etc. Fish seed production gets top priority for achieving the yield in the private sector and substantial provision will also be kept for the important item of reclamation in inland fisheries.

With increased fish seed production and development of techniques of economical reclamation of swamps for fish culture India can start intensive fish culture and raise the level of production per acre to a standard developed in China, Japan, Israel and other countries. A very efficient specialist service will be necessary to bring about intensive production in the field.

Development of reservoir fisheries has also been given high priority and a number of reservoirs are under development.

General

There is evidently a great scope for development of fisheries which has immense potentiality at present. India does not compare itself favourablely with its neighbour towards this end. Even Japan which is much smaller in size has developed the art and industry to such an extent that it would call for many years of toil to compete with here. The following tables give an indication of development.

(1) FISIHING PORTS

India	
No. of ports completed.	
Ist Plan	..
IInd Plan	3
IIIrd Plan	9
1966-67	5
Japan	
No. of ports—	
1960	2,725
1961	2,739
1962	2,751
1963	2,756
1964	2,770
1965	2,775
1966	2,777

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(2) POWERED BOATS FOR MARINE FISHERIES

Year	India			Japan		
	No. of Boats	Gross Tonnage	Horse Power	No. of Boats	Gross Tonnage	Horse Power
1960 .	1777	10500	48000	165602	1563989	3908276
1961 .	2439	14500	66000	178046	1757561	4347548
1962 .	2809	16700	76000	188654	1852935	4695278
1963 .	3392	20100	92000	192515	1909522	5014430
1964 .	3747	22200	101000	203718	2024431	5406330
1965 .	4241	25100	115000	217156	2054127	5682661
1966 .	5073	30100	137000	..	..	..

(3) ICE-MAKING AND REFRIGERATING PLANT

Item	India				Japan				
	End of Second Plan	End of Third Plan	1967	1968	1961	1962	1963	1964	1965
No. of Ice-Plants	18	35	1	12	1785	1803	1791	1752	1722
Production capacity in tons per day.	111	169½	3	71	30070	30911	30798 (million tons)	30785	30163
No. of cold storage . . .	36	36	4	21	2827	2889	2940	2955	2959
Production capacity in tons per day	495	688	4	518	3951	4344	4693	5093	5391
No. of freezing plants . . .	6	4	..	1	..	..	..	..	..
Production capacity in tons per day	35½	20	..	12	..	..	..	..	..
No. of frozen storages . . .	5	4	..	1	..	..	..	..	..
Production capacity in tons per day	255	885	..	50	..	..	..	..	..
Refrigerating	..	..	..	..	1124	1163	1195	1224	1247
No. of Plants capacity per day (million T)	..	..	..	..	12902	13636	14215	14714	15059

Conclusions

Considering the observations made by the Estimates Committee in their various reports and the necessity of greater attention to the development, research and other related aspects of fisheries in the context of an expanding programme with great potentiality, it was felt that:

I. The organisation at the Centre should coordinate and see that the research and development needs of the industry are fully met both at the Centre and States. The administrative machinery at the State level should be geared accordingly and Directorates of Fisheries established especially in the States with greater potentiality in fisheries.

II. The ICAR who have now taken up fisheries research institutes should draw up a coordinated approach for research without duplication or overlapping of efforts. It should take urgent steps to remove the lacunae pointed by the Estimates Committee in regard to Staff, equipment functioning etc. in various institutes.

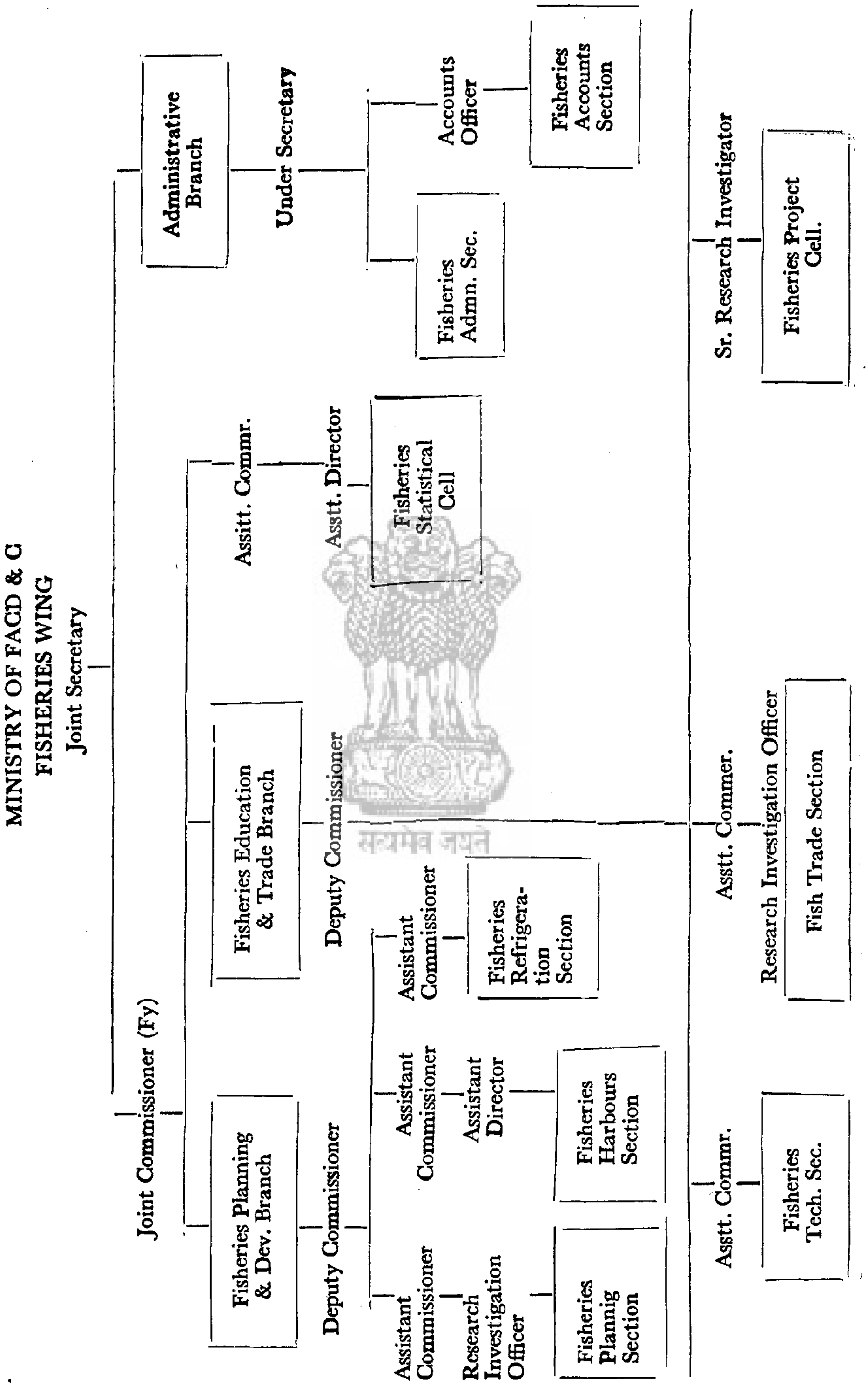
III. For a better and efficient control over research activities, a Central Fisheries Research Institute, on the lines of IARI, New Delhi, IVRI, Izatnagar, NDRI, Karnal, should be established. While under the overall control of ICAR, it should control and coordinate all research activity from the national point of view while the other institutes should look after the local /regional requirements.

The Institute should be given the status of a University.

IV. The extension service in fisheries needs to be strengthened at all levels from the Centre to the field. Necessary technical staff should be appointed as suggested *viz.* Fisheries Extension Commissioner at the Centre and District Fisheries Officers and Block Fisheries Extension Officers at the District / Block level.

V. Urgent steps should be taken to bear the developmental activities which more or less is in a static position. The requirements of fishing boats, marine diesel engines, nets, refrigerated vans, cold storage, harbours/ports, etc. need special attention to boost the export trade.

VI. Fishermen's requirement and their welfare also deserve special care. They should be provided with minimum facilities like housing credit, transportation and other facilities.


MINISTRY OF FACD & G
FISHERIES WING
Joint Secretary
Joint Commissioner (Fy)
Administrative Branch
Under Secretary
Accounts Officer
Fisheries Accounts Section
Fisheries Admn. Sec.
Fisheries Planning & Dev. Branch
Deputy Commissioner
Assistant Commissioner
Research Investigation Officer
Fisheries Planig Section
Assistant Commissioner
Assistant Director
Fisheries Harbours Section
Fisheries Education & Trade Branch
Deputy Commissioner
Assistant Commissioner
Fisheries Refrigera-tion Section
Assitt. Commr.
Asstt. Director
Fisheries Statistical Cell
Asstt. Commr.
Fisheries Tech. Sec.
Asstt. Commer.
Research Investigation Officer
Fish Trade Section
Sr. Research Investigator
Fisheries Project Cell.

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FISHERIES

(As recommended by the Seminar)

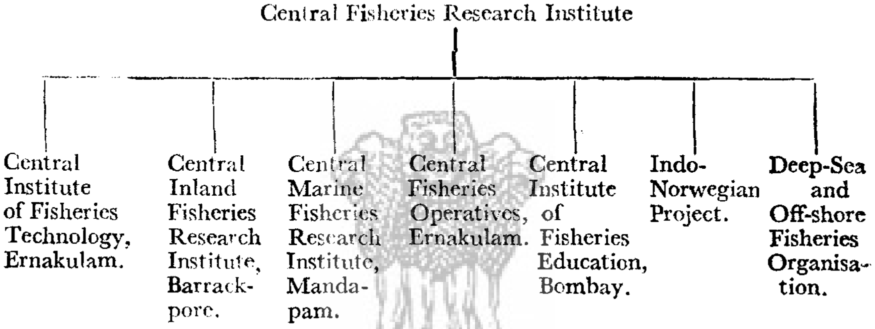
(Organisational Chart)

State Level . . .	Fisheries Division at Sectt. level. Director of Fisheries.
District level . .	District Fisheries Officer.
Block level . . .	Extension Officer Fisheries.

FISHERIES

(Research Organisation)

National level


Central Fisheries Research Institute
Central Institute of Fisheries Technology, Ernakulam.
Central Inland Fisheries Research Institute, Barrackpore.
Central Marine Fisheries Research Institute, Mandapam.
Central Fisheries Operatives, Ernakulam.
Central Institute of Fisheries Education, Bombay.
Indo-Norwegian Project.
Deep-Sea and Off-shore Fisheries Organisation.

The administrative set up of these Institutes is satisfactory but it is considered that most of them are understaffed , ill-equipped and therefore need eradication of these deficiencies to make them effective.

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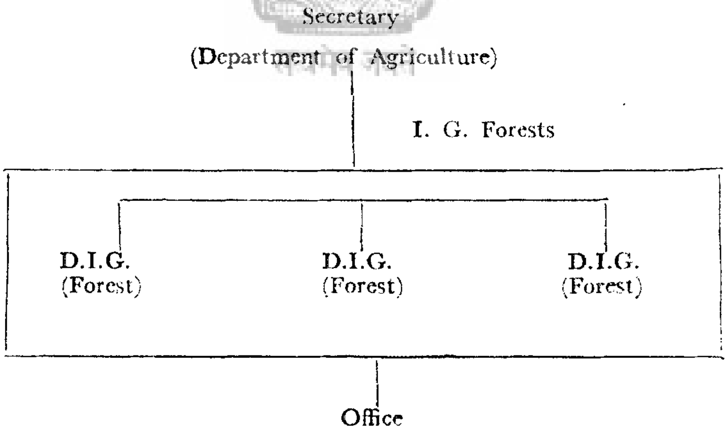
CHAPTER VII

FORESTRY

Forestry plays an important role in the economy of the country and is closely linked with agricultural production. The Forestry service in India dates back to over 100 years.

Administration :

Forestry forms a wing of the Department of Agriculture in the Ministry of Food, Agriculture, Community Development and Cooperation at the national level. The Central Government is chiefly concerned with the implementation of National Forest Policy, coordination, forest education at professional and sub-professional levels, research and training and coordination of conservation of wild life. For implementing the National Forestry Policy and for coordinating the forestry activities in the States, Central Board of Forestry has been constituted under the Chairmanship of the Union Minister of Food and Agriculture and Ministers incharge of forests in the States. A Central Forestry Commission with the Inspector-General of Forests as Chairman has been set up recently for effecting technical coordination, disseminating information and collection of statistics on forestry. These functions are looked after by the Secretary, Department of Agriculture assisted by I. G. Forest and ex-officio Joint Secretary and three technical officers, *i.e.* D. I. G. Forest, Central Forestry Commission and the secretariat staff. The organisation is as below :



The office prepares perspective planning for the immediate requirements of raw materials for forests and wood industry. It also gives advice on expert policy of timber and wild life etc.

The organisational structure at the State level and below is given hereunder:

Chief Conservator (Forests)

Conservator of Forests

District Forest Officers

Forest Rangers

Forest guards.

Research, Education and Training :

Forest Research Institute and College, Dehradun is concerned with (i) Research in Forestry, biological sciences and forest products' utilisation and (ii) Forestry Education. The Forest Research Institute and College combines forest education with research in both forestry and forest products. The Institute has been recognised as the premier research institution in forestry in the tropics. It has been recognised by the FAO as a centre for research and training in forestry in South East Asia region. The forestry education is conducted at the Indian Forest College at Dehradun, which trains the probationers of Gazetted Forest Service of all the states and G. F. S. at the Northern and the Southern Forest Rangers Colleges at Dehradun and Coimbatore which impart training to Rangers of the States of Northern and Southern regions of the country.

The entire field of forestry administration, research, education and training has not been considered by the Study Team on Agricultural Administration. As such it was given serious thoughts by the Seminar and the following decisions were reached.

1. The Administrative structure from the national to the field level was considered satisfactory. The subject of forestry has been included in the organisational charts at the National and State level as proposed by the Seminar.
2. The research, education and training aspects in forestry should be transferred to the Indian Council of Agricultural Research.
3. The Forest Research Institute, Dehradun should be recognised as a 'national institute' and given the status of a university.
4. State sub-stations carrying out research in forestry should be brought under the control of Agricultural universities (I.C. A.R.).
5. The administration of forests should vest with the Departmental authorities and Panchayat administration, wherever is in-charge, should be eliminated.

APPENDICES

APPENDIX I

CHAIRMAN
Administrative Reforms Commission
New Delhi
December 2, 1967

My dear Sri Rama Reddy,

You would kindly recall to your mind that I had requested you some a months ago to be the Convener of Seminar of Members of Parliament on Agricultural Administration. The Study Team report is now ready and I am herewith sending a copy of it to you.

The Administrative Reforms Commission attaches utmost importance to Agricultural Administration. In India, agriculture is the spring board of economic progress.

You have been taking intense interest in problems relating to agriculture. You are the Secretary of the Farmers' Parliamentary Forum. Your recent tour in Japan, Australia and other countries has given you comparative view of agricultural administration. I therefore think that you are best fitted to the task of managing the Seminar and helping the commission to formulate its final recommendations on Agricultural Administration. I therefore request you to prepare a list, mainly of Members of Parliament, of all the political parties, who have the necessary knowledge and interest in agricultural administration. The list of members, if too large, becomes a Conference. I leave it to your discretion to enlist those who would be in a position to contribute to the discussions.

The Secretariat and other assistance required for the purpose will be placed at your disposal.

The Seminar has to conclude its work by the end of January, as the Commission is likely to take up consideration of this and other allied subjects in the month of February, 1968.

With kind regards,

Yours sincerely,

Sd/-
(K. Hanumanthaiya)

Shri N. Sri Rama Reddy, M. P.,
13B, Ferozeshah Road,
NEW DELHI.

APPENDIX II

List of Members Invited for participation in the seminar on Agricultural Administration

1. Shri D. C. Sharma (L. S.), 19, Windsor Place, New Delhi.
2. Shri K. P. Malikarjunaudu (R.S.) 187, North Avenue, New Delhi.
3. Shri R. K. Amin (L. S.), 218, North Avenue, New Delhi.
4. Shri S. B. Patil, (L. S.), 84, North Avenue, New Delhi.
5. Shri C. M. Kedaria, (L. S.) 15, North Avenue, New Delhi.
6. Smt. Sucheta Kripalani, (L. S.), 7, Thyagaraja Marg, New Delhi.
7. Shri Narain Pattra, (R.S.) 79, North Avenue, New Delhi.
8. Shri Y. Gadilingana Gowd. (L. S.), 86, South Avenue, New Delhi.
9. Shri D. K. Kunte, (L. S.), 6, Raisina Road, New Delhi.
10. Shri Banke Behary Das, (L. S.), 142, South Avenue, New Delhi.
11. Shri P. Venketasubish, (L.S.), 25, Canning Lane, New Delhi.
12. Shri, M. P. Chengalraya Naidu, (L.S.), 8, Lodhi Estate, New Delhi.
13. Shri Inderjit Malhotra, (R. S.), 9, Meena Bagh, New Delhi.
14. Shri N. R. M. Swamy, (R. S.), 16, Western Court, New Delhi.
15. Shri S. S. N. Tankha, (R. S.), 28, Dr. Rajendra Prasad Road, New Delhi.
16. Shri C. D. Pande, (R. S.), 10, Dr. Rajendra Prasad Road, New Delhi.
17. Shri S. K, Vaishampayan, (R. S.), 37, North Avenue, New Delhi.
18. Shri M. Ruthnaswamy, (R. S.), 25, South Avenue, New Delhi.
19. Shri Uchegowda (R. S.), 2, Ferozshah Road, New Delhi.
20. Shri Mali-Mariyappa (L. S.), 2, Ferozshah Road, New Delhi.
21. Shri M. N. Naghnoor, (L. S.), 31, Canning Lane, New Delhi.

22. Smt. Vimla Deshmukh, 101, V. P. House, Rafi Marg, New Delhi.
23. Shri K. Lakkappa, (L. S.), 154, South Avenue, New Delhi.
24. Shri H. Samuel, (R. S.), C. 1/9, Tilak Marg, New Delhi.
25. Shri M. S. Murthi, 23, Canning Lane, New Delhi.
26. Shri Yamuna Prasad, 209, North Avenue, New Delhi.
27. Shri J. Rohatgi, 65, North Avenue, New Delhi.
28. Shri Partap Singh, (L. S.), 39, North Avenue, New Delhi.
29. Shri Prem Chand Varma, 818, Kundewalan, Ajmeri Gate, New Delhi-6.
30. Shri C. L. Verma, (R. S.), 194, North Avenue, New Delhi.
31. Shri Shapani Ch. Patanaik, 10, Rakabganj Road, New Delhi.
32. Shri N. Sreekantan Nair, 17, Windsor Place, New Delhi.
33. Shri N. Sethuraman, 132, North Avenue, New Delhi.
34. Shri P. Abrahem, 193, North Avenue, New Delhi.
35. Smt. Sharda Mukerji, 27, Canning Lane, New Delhi.
36. Shri M. P. Shukla, 198, North Avenue, New Delhi.
37. Shri Soma Soundaram, 121, North Avenue, New Delhi.
38. Shri R. D. Bhandar, 127, North Avenue, New Delhi.
39. Shri G. Y. Krishnan, 128, North Avenue, New Delhi.
40. Dr. Mahadev Prasad, 31, North Avenue, New Delhi.
41. Shri S. P. Goswami (R. S.), 163, North Avenue, New Delhi.
42. Shri M. V. Rajsekharan, (R. S.) 6, Janpath, New Delhi.
43. Shri Ram Bahadur Sinha, (R. S.), 102, South Avenue, New Delhi.
44. Shri Baharul Islam (R. S.), 129, South Avenue, New Delhi.
45. Shri Kota Punnaiah, (R. S.), 98, North Avenue, New Dalhi.
46. Shri Sanda Narayanappa, (R. S.(, 14, A Ferozshah Road, New Delhi.
47. Shri Kollur Mallappa, (R. S.), 8, Western Court, New Delhi.
48. Shri Jagat Narain, (R. S.), 16-B, Ferozshah Road, New Delhi.
49. Shri Dalpat Singh, (R.S.), 168, South Avenue, New Delhi.
50. Shri S. D. Mishra, (R.S.), 167, Jorbagh, New Delhi.

51. Shri K. C. Baghal (R. S.), 10, Wellesley Road, New Delhi.
52. Smt. Mahinder Kaur, 9, Tees January Marg, New Delhi.
53. Shri R. Parthasarthi, 66, South Avenue, New Delhi.
54. Shri N. Srinivasa Reddy, 113, V. P. House, Rafi Marg, New Delhi.
55. Shri K. Ramaih, 6, Western Court, New Delhi.
56. Shri G. R. Patil, 117, North Avenue, New Delhi.
57. Shri G. S. Dhillon (L. S.), 19, F. Shah Road N. Delhi.
58. Shri Hem Raj (L. S.) 77, South Avenue, New Delhi.
59. Shri S. Supakar (L. S.)
60. Shri Tulsi das Dasappa (L. S.), 215, North Avenue.
61. Shri S. N. Mishra (R. S.), 124, Dr. Rajendra Prasad Road.
62. Smt. S. Laxmi Bai (L. S.), 17, South Avenue, N. Delhi.
63. Shri M. L. M. Naidu (R. S.).
64. Shri T. D. Jadhav (R. S.), A. 50, North Avenue, N. Delhi.
65. Shri R. N. Mirdha, (R. S).
66. Smt. Shanta Vasisht, 12 A. F. Shah Road, New Delhi.

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APPENDIX III

Welcome speech by Shri N. Sri Rama Reddy, Convenor, Seminar on Agricultural Administration (1st May, 1968)

Shri Hanumanthaiya Ji, Hon'ble Members of Parliament, friends of the Press and Friends,

You know the genesis of the Administrative Reforms Commission. Administrative Reforms Commission was constituted by the Government of India in their resolution 40/3/65-AR(P) dated the 5th January, 1966 with the following terms of reference for Agricultural Administration.

1. The role of the Ministry of Food and Agriculture and other Ministries concerned with agricultural production and coordination between them;

2. Inter-relationship between State Agricultural Departments, Community Development organisation and other organisations concerned with agricultural production in the State;

3. Organisation for agricultural administration at the State and district levels; and

4. Coordination between research and extension organisations.

Accordingly, the Commission came into existence headed by Shri Morarji Desai, the present Deputy Prime Minister. But after the took over as Deputy Prime Minister, he handed over this Commission to Shri K. Hanumanthaiya Ji who was already a member and has had wide experience in drafting the administrative reforms report on Punjab and therefore he, in view of the Government, was able enough to carry on the responsible work of this administrative reforms. So, he took over the Chairmanship and then the other members are Shri H. C. Mathur, Shri H. V. Kamath, Shri D. Mukherjee and Shri V. Shanker.

After the constitution of the Administrative Reforms Commission, serveral Study Teams were appointed in order to assess and find out the various aspects of each department. Similarly, a Study Team on Agricultural Administration was appointed with Mr. H. M. Channabasappa, M.L.A., Mysore, as Chairman, Shri Charan Singh, former Chief Minister, U.P., as Member, Shri V. Ramaiah, former Minister of Food, Madras another member, Capt. Rattan Singh, former Minister for Animal Husbandry for Punjab, Shri T. A. Pai, Managing Director Syndicate Bank and also former Chairman of the Food Corporation of India and Dr. K. C. Naik, Vice-Chancellor, Agricultural University Bangalore.

The Study Team was requested "to ascertain facts, locate principal problem areas, examine solutions for the problems and suggest such of them as they would recommend for the Commission's consideration". Accordingly, the Study Team prepared a report which you can see here in two volumes and the report is therefore for everyone of you to study. And now in their wisdom the Commission thought that a Seminar should be conducted consisting mainly of the Members of Parliament who are either agriculturists themselves or those that are interested in agriculture with a view to find out a process to study the recommendations. Accordingly, I was appointed the Convenor. I do not know how far I was qualified to be the Convenor for this Seminar. But all the same I accepted it because the orders came from our leader Shri Hanumanthaiya Ji. I accepted it and I tried to do my best. The *modus operandi* for the Seminar was I thought to prepare certain issues, pose issues to the Members of this Seminar and elicit their opinion on these issues which ultimately put together would make a certain administrative set-up, just what I had in my view. I might have done well or not. It is for you to add, if necessary, any further issues if you think that they are necessary. This is not the final thing. Whatever issues have been distributed to you are not final, but all the same you are at liberty to recommend new issues to be considered.

Then, for the purpose of this Seminar, the subject of Agricultural Administration has been divided like this : Agricultural Research, Agricultural Education and Training, Agricultural Extension, Agricultural Administration, Agricultural Production Programmes, Fisheries and Forestry. These are the various subjects that are going to be discussed in this Seminar.

Animal Husbandry is also included in Agriculture. Under the new set-up of the I.C.A R., animal husbandry comes under Agriculture. Any way, we have got separate issue for animal husbandry also. We have distributed some issues and side by side if there is already a recommendation of the Study Team that has also been included and certain examples of foreign countries like U.S.A., Canada and Japan have also been given and charts of the present administrative set-up have also been given. Study Team's recommendations have been included and given for a comparative study.

Each one of the members could make a comparative study of these things and he can form his own opinion. Therefore, gentlemen, with these few words I extend my heartiest welcome to Shri Hanumanthaiya Ji, the Chairman of the Administrative Reforms Commission and you Hon'ble Members of the Parliament. It is needless for me to tell you how important it is a task and how much labour we had to put in to see that a proper administrative set-up is given to the country with a view to see that the greatest lag in the agricultural field today is properly filled up. It is often said that it is the failure of the agricultural administration that has brought about a great disastrous situation in agricultural production. That gap you must fill up properly by giving a proper administrative set-up not only in the national level, but at the State level, at the district level and taluka level as well as the village level. This is our task, Any way, the task that is set is very big one and therefore it requires the hardest work and hardest thinking by everyone of you, that is the guidance which the Administrative Reforms Commission is expecting from you.

With these few words, I extend my heartiest welcome to everyone of you. Thank you very much.

Appendix IV

Inaugural address of Shri K. Hanumanthaiya, Chairman, Administrative Reforms Commission

(*1st May*, 1968)

Shri Sri Rama Reddy and friends.

I am grateful to all those who have gathered here. It is for two reasons. The first reason is that Members of Parliament who are the masters of Government of India, which is incharge of administration, should take interest in this very important subject. Unless Parliament Members take interest, I do not think reforms could be fully implemented. Even if Government passes some orders by way of implementing the reforms, this will remain on paper. It is the implementation that is the real remedy. For the last 1½ hours, the Commission was examining Minister of Agriculture, Shri Jagjivan Ram, on this problem and he made a revelation. In one particular matter, he had given his opinion for reform on some special bodies but even today they remain without being implemented. Secondly, agriculture is such an important subject; it is almost the basic subject.

From 1946 to 1966 is a 20 years period. We have imported 7,88,78,000 tonnes of food-grains costing 3,426 crores of rupees. You will see in retrospect all the money that was invested in the First Five-Year Plan and much more has been spent on this one item of importing foodstuffs from abroad. I am glad that it is easy to be wise after the event but nevertheless we can feel sorry that even if half the amount had been utilized for purposes of irrigation and fertilisers, our food problem would have been solved and we would not have been continuously begging at the doors of others. 3,426 crores of rupees is a staggering figure. Therefore, this Seminar in which we have gathered today is, in my opinion, doing such an important work that it will not only bring solutions to make this country self-reliant but also self-respect.

You hear accusations on the floor of Parliament by Opposition members and rightly so, that we are continuously begging at the door of somebody else. Even though we, who are on the Treasury Benches, put brave faces, we feel the pinch of the attack, If this Seminar takes to heart this sad situation in our food front, I am sure, you will be able to give a great momentum to rectification of those deficiencies and draw backs that are knocking our foot steps.

I appointed Shri Rama Reddy as the Convenor of the Seminar. In appointing him I am not doing any favour to him. Even in the selection of the Study Team on Agriculture Administration, you will see names that they are people who are actually working in various field of agriculture administration. The Chairman of the Team was a Minister twice but he himself is a farmer. Whenever he is out of office, he does agriculture and works on his big farm. So also another Minister, Shri Charan Singh, who is an able administrator and Mr. Pai who was Chairman of the Food Corporation and I put one Vice-Chancellor of Agriculture University. They have made a report which I should say makes some revolutionary suggestions. All the recommendations may be accepted or may not be accepted. But the study on the subject, in my view, is one of depth and awareness. The Study Team Report has 550 pages, with Tables and Annexures of another 673 pages. All told, this is a document of 1225 pages but you need not go through all these pages. They have made the summary of the proposals and also the report itself contains recommendation in a summary form which can be read in about half an hour. Even if you study the summary, you will understand the report so thoroughly that you need not go back to the report that why those suggestions have been made.

Agricultural administration in the States as well as in the Centre has to be one harmonious though for purposes of Constitutional work in some areas most of the areas, why some areas, are in the State List; only a few areas, are in the Centre list. There is no idea of taking the responsibility of the States. On the other hand, the Study Team makes fundamental departures from the previous positions and has taken different position. One recommendation is that the Union Government should divest itself of all executive functions and confine itself only to policy matters. In pursuance of the above policy, arrangement of business as proposed is as follows. Therefore, they want to strengthen the State Governments, make them more responsible. What should be the pattern of the Ministry in the Centre. The total expenditure on Food and Agriculture Ministry's staff in the Central Government comes to Rs. 9·12 crores. Whether on the Ministerial and other establishment at the Central level there should be such a big expenditure as over Rs. 9·12 crores, we have to carefully examine. That examination you can very well do with reference to the suggestions that are given in the Report. There are any number of tables.

Then at the State level what should be the pattern of Agriculture Departments and Agriculture Ministeries, that we have to examine. Below the State level there is the District administration. That is the most basic area. Anything that is to be done has to be done in that field and though for purposes of Community Development Blocks and other things for agricultural purposes, it is the District administration that has to be considered. You consider the District administration so as to make it conscious of its responsibilities to produce food in sufficient quantities.

Now, there is the famous controversy, whether the District Collector should be overall head of the District and every other Departmental officer placed under him. I have been receiving representations from various Associations. The inter-services rivalry is so great that it has become very hard job for us to take a decision. I see IAS people say, "We are the best of lot and every one else in Government should work under us." Engineers, Doctors and Agriculturists and other professional people say : "We are being denied. We produce, we do concrete service to the country. Why do you give us this inferior status and you deny to a large number of us, what is called the incentive, the self-respect. At least you should give us equal status with the other services". Therefore, since we are handling administration and administration means the heirarchy of officers, you have to consider whether the present system of administration divided into various cadres and sectors should continue or whether there should be some other system wherein everybody finds satisfaction. equality of opportunity and recognition of service done. This is one of the biggest issue facing not only agricultural administration, but the entire field of administration.

The other day, the Prime Minister made a speech at Ranchi, the convocation address to the engineering students, that she is in favour of giving the technical people whether they are engineers, agriculturists and others, equal opportunity. So far as my personal view is concerned, we have embodied the concept of equality of opportunity in the Constitution. Having done that you cannot give preference to one class. In the industrial sector, we are very much dissatisfied. If there is a monopoly, we want monopoly commission. Monopoly, whatever name and shape it takes, wherever it is, we cannot approve of it. Therefore that is one of the factors that this Seminar has to consider whether these agricultural services should be accorded the same incentive, status and opportunity. They argue why not a District Agricultural Officer who had made a success of himself be one day Chief Secretary to Government. Why should he not become the Secretary of the Department. Even the IAS and ICS officers, some of them, are appointed as Governors. Why should it not be the same opportunity to an engineer who has built the Bhakra Dam or another agriculturist who has done good work in the field of agriculture. These are the considerations. We have to think how the services have to be reorganised so as to fit into the system of agriculture being made the heart of administration. Unless we become self-sufficient in food, we cannot do anything else better.

In the matter of recruitment, I will put through one idea. Now we recruit raw graduates for the Agriculture Department. They become agricultural inspectors or village level workers. They know less about practical agriculture than the peasant in the village. Therefore he will not be able to command that amount of respect. The peasants do not feel like acting on his advice. He has to thrust himself upon those people because he has to submit a report of the work he has done. If, on the other hand, a condition is made in the matter of recruitment that only a agricultural graduate who has done actual agricultural work in the farm for 5 years, will be eligible for recruitment to the Department. Now in India we are turning out every year 13,000 students from agricultural colleges and we are getting 6,000 graduates. No Government in the world would be able to provide Government service to agricultural graduates who are now without employment. They necessarily go to their villages or do something or the other by way of agriculture. Every year, some of them have to settle down in agriculture. In my own State, I know even some agricultural professors have given up the job and set-up their farms because they thought that they would have a better way of living. I am sure if an attempt is made, we would get sufficient number of application with the qualification and in certain cases you can relax the rules. There are 9 agricultural universities and they are doing extension work also.

At the level of Government of India, there is research work being done. At the State level, research work is being done. Universities are also doing research work. Whether this duplication of effort and expenditure could be avoided and research work could be systematised so that the results of research could be utilized by the whole of India through one agency. That is another subject we have to consider.

I have merely stated the problems. I want you kindly to discuss all these subjects contained in the report by way of recommendation one by one and come to conclusions. Whatever conclusions this seminar arrives at would be of such great help to the Commission who will be able to feel confident to make recommendations on those lines. We will further have the self-confidence that so many Members of Parliament are of this view. However, in reforms, however, good or bad they may be, acceptability is the touchstone. If a reform is not acceptable to the majority of the people or to a considerable section of the people, it is waste of effort and time. If Members of Parliament are kind enough to spare more time, I want to have seminars like this on every subject so that not only at the time of Government taking a decision but more important for it being implemented. Parliament Members may be able to continuously supervise and also watch the result of those reforms with a view to effect modifications. This double responsibility of yours will do great good to the country and it is a patriotic fervour that all of us have gathered there.

Incidentally, I want to pay compliments to the Lady Member here. She worked on the study team for planning. They made very good recommendations and most of the recommendations the Study Team made and we accepted most of them. Some of them we could not accept. This is a sense of satisfaction that not only to the Study Team on Planning has derived, but also we have derived.

APPENDIX V

Valedictory Address by Shri A. P. Shinde, Minister of State for Food and Agriculture (18th May 1968)

Mr. Chairman, Shri Rama Reddy, our Hon'ble guest Mr. Evens and Hon. Members of Parliament.

It gives me immense pleasure to have this opportunity to address you on a very important subject of Agricultural Administration. I am really amazed by the fact that all of you took so much labour in pondering over the subject. I think you have set a new pattern and a record that politicians can seriously go into the details of subjects. I wish this pattern is followed by others also. No doubt, agriculture is such an important subject, not only in our country, but all over the world. In fact, much more so in our country and it is quite appropriate that our politicians and especially parliamentarians who are interested in agriculture should be prepared to take so much pains in going into details of subjects. I really congratulate, all of you, for doing this very commendable job. Agricultural administration is such a vast and intricate subject that I don't think that I shall be in a position to deal with the subject as such. But since I have been invited to give some talk with regard to the subject, I wish to be more frank with you and I do not want to be very formal in addressing you in regard to the subject.

To my mind, the first point that strikes me very much is the nature of our services in the country. Perhaps, I will repeat the views expressed by a Team; it was a foreign team which went into the problems of D.V.C. Project a few years earlier. When this Damodar Valley Project was implemented and crores of rupees were spent, the water utilization was not there. It developed gradually, but for quite some years the water utilization did not take place. Then a number of teams—Indian and Foreign Team went into the subject and one of the foreign teams which went into the subject came to the conclusion that Indian services are so much divorced from the people that they have hardly any live contact with the masses as such. In fact, they said that just as British Civil Servants who were here to only govern the country; they were completely divorced like foreign rulers from the Indian people. I think this criticism is very valid. You may call me very blunt for saying this. But I hold the View; I will repeat that the Civil Services today are not completely identifiying themselves with the masses. Whatever rules and regulations you may form, whatever type of services you may have on paper, unless there is a complete integration of services with the people as such I do not think we shall be in a position to find true solution of our problems.

Then the second point which strikes me because I am thinking, as a student of agriculture in my own humble way, tried to study the development of agriculture in my own country and in important countries of the world and I have also some experience of doing some spade work in the field over a decade. In no country, agricultural administration will succeed unless the administration is backed by appropriate price policies in regard to agricultural commodities. However, elaborate services you may plan, whatever training you may give to them and even assuming for the sake of argument that my first point is also completely met, that the services completely identify with the masses even then if the agricultural price policies are not appropriate which do not safeguard the interest of the agriculturists, no amount of effort is going to bear any fruit at all. And in this country, to my mind, one of the reasons why we have failed on agricultural front is that we have failed to evolve appropriate price policies upto now. Though recently we have been struggling and grappling with the problem and I hope that in times to come there will be sharp realisation of this fact at the political level and we may be in a position to evolve appropriate agricultural policies.

I may cite an instance, I have limited time but I will try to make my points within the limited time available at my disposal. Many times friends ask me why cooperatives in certain parts of the country are very successful. I may tell you, I am associated with the first cooperative sugar factory in India, which Dr. Gadgil and myself were working together for 12 years and at that time the Cooperative sugar factory was not considered e very feasible proposition. But thereafter in Maharashtra and particularly the Western part of Maharashtra where the cooperatives have come up, they have become very successful and nowhere in Asia I see such successful cooperatives. Even in Japan, though the Japan Cooperative Movement is better advanced as compared to ourselves, but even in Japan such successful cooperatives are not there. When I go into the reasons, the only reasons is this—cooperatives in Maharashtra have succeeded in giving very much incentive price to the farmer and that is why loyalty of the members have been built up, that is why very good extension organisation has been built up by the cooperatives themselves and the productivity has gone up. So in whatever way you argue, the main thing is unless agriculture in this country is a profitable business—is a business worth paying, no amount of administration is going to help us. These are my preliminary observations.

Then, I would like to go into two or three important aspects of agricultural administration.

I really fail to understand that Constitutionally we say that agriculture is a State subject and when I try to review the position of agricultural development in our own country, and especially in the background of our recent success for instance, there is no doubt whatsoever that we have achieved some success on agricultural front recently and this is, I am not prepared to say—I am not defending the case of my Ministry in Parliament—not only due to many factors. First factor is our scientists. Scientists in India have really succeeded for the first time in making valuable contribution to the evolution of new high yielding strains. But even if the scientists have succeeded in evolving these strains, it would not be a final solution unless the Government succeeds in carrying the results of science to the agriculturists. In this country as a result of every encouraging response from the farmers we have succeeded in carrying the results of science to the millions of our farmers. This has disproved one's fallacy that our agriculturists are ignorant and backward. I am not prepared to agree to this contention. They may be illiterate. But in India we have one of the most intelligent community of farmers and they are so quick to pick up any new results that even educated persons would be surprised to see the pace at which our agriculturists can pick up new methods. So these are two factors, our achievement in the field of science and the response from large number of farmers, which have contributed to increased production. The point which I am trying to argue with you is this that in regard of all these matters, whether high yielding variety intensive fertiliser, improved technique, better management or plant protection, the initiative came not from any State, but it is all Centre's contribution. You may say that Centre coordinates and it pools the all-India experience and hence is in a better position to take initiative. The fact remains that initiative did not come from the State Government.

I was never a member of the local legislature, but I have had some occasions to observe the discussions on agriculture. I find that members of Parliament take more interest in debates regarding agriculture than the members of State Legislatures. This is really a puzzling thing. Though agriculture is a State subject, why no initiative has come from the State Governments on any important matter and why members of Legislatures do not take equal interest as Members of Parliament take in the matter of agriculture. This was one of the points I wanted to put up in the light of the recommendations of the team and by and large I agree with the recommendations which this Seminar appears to have made.

The second point in regard to which I would like to make an observation is in regard to research. I have already referred to the fact that very outstanding results have been achieved by our scientists. What is the reason? In the old days, research was carried out by the Agricultural Departments of the State Governments. Research activity was carried out in the university or agricultural colleges. Research activity was carried out in some of the research institutions of the Central Government. There was lack of coordination in all these research activities and the impact of the research could never be felt. Now I had occasion to talk to scientists from a number of countries. I had occasion to be at the International Rice Research Institute in the last week. It was at Manila International Rice Conference. Many of the important leading scientists of the world are serving there. They are very good scientists. But I have come to the conclusion that our scientists are second to none. But proper coordination was not there. For the first time in India, we have evolved coordinated research projects under a single coordinator. Whether the research activity is carried. out in the State, in the university or agricultural college, or at the station looked after by the Centre, now we have grouped all that. As a result of that, the process which took 15-20 years before, we can now complete in 3-4 years. That is why we have started getting very spectacular results. If there is proper support from Members of Parliament, our scientists are going to keep up that progress and I have no doubt in my mind that in this part of the globe we will become leading in the research field.

I see in the team's report in the ARC that every thing should be separated. That means going back to the old pattern; that means to forget whatever has happened during the last few years. It will be most tragic.

I have an engagement with the Prime Minister now. We are always in Parliament and there will be other opportunities to exchange view with you not only as a politician but also as a social worker. Problems of agriculture are very dear to me like you and I am one of you and I hope to look forward to have more opportunities for an exchange of view.

I am thankful to Chairman, Shri Sri Rama Reddy, and to all of you for giving me this opportunity to express my views and I am greatful to you for the same.

CHEERS.

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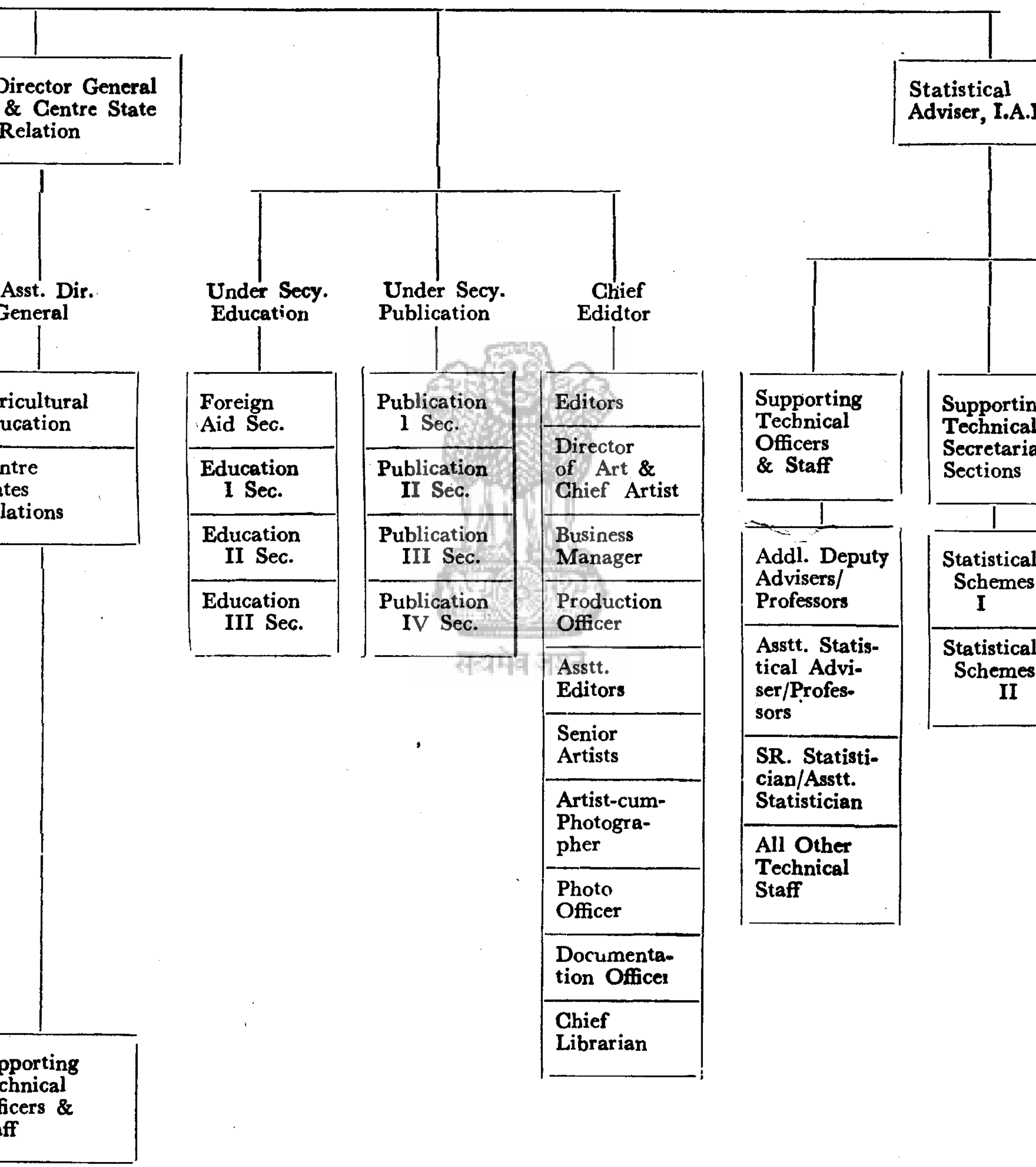

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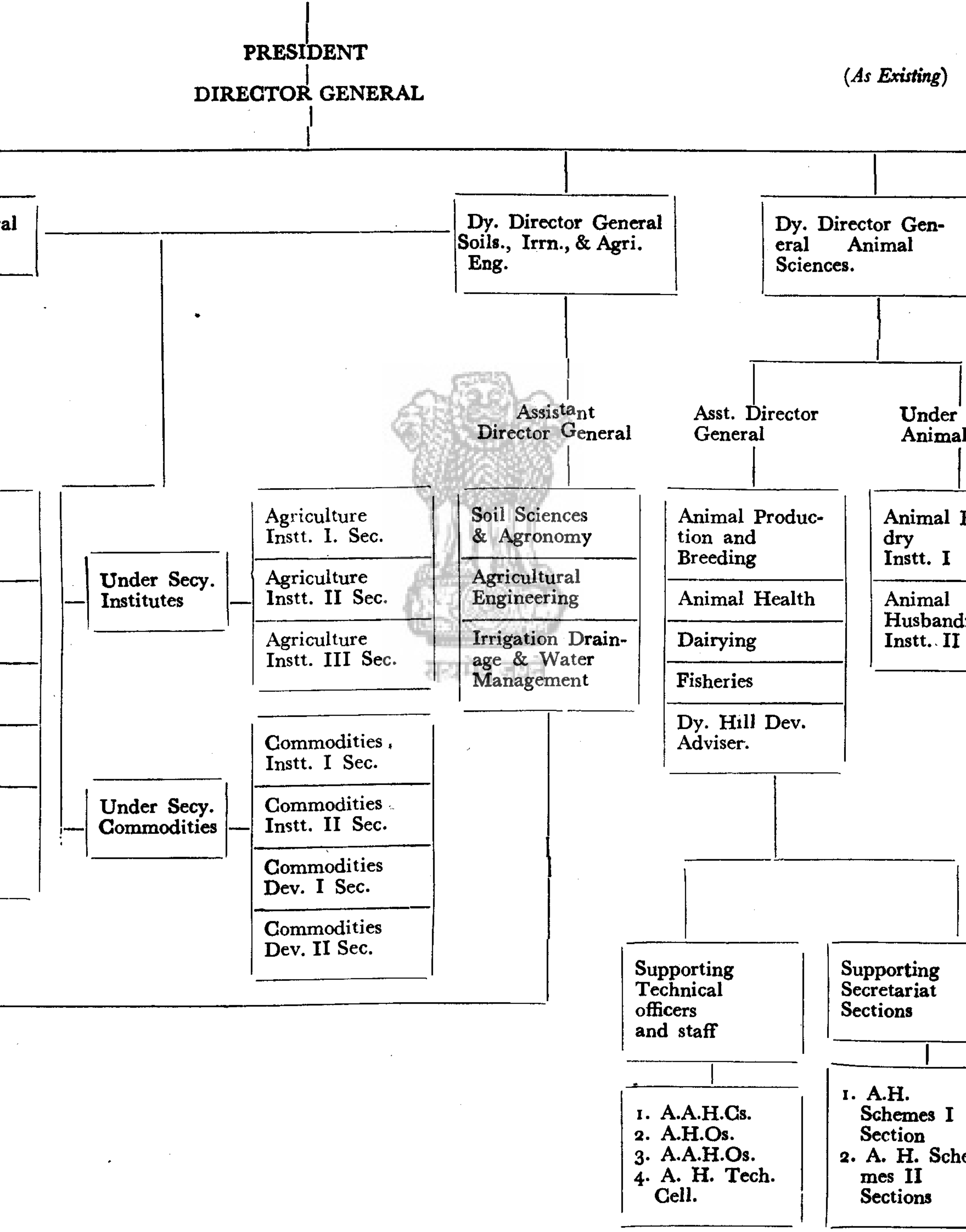
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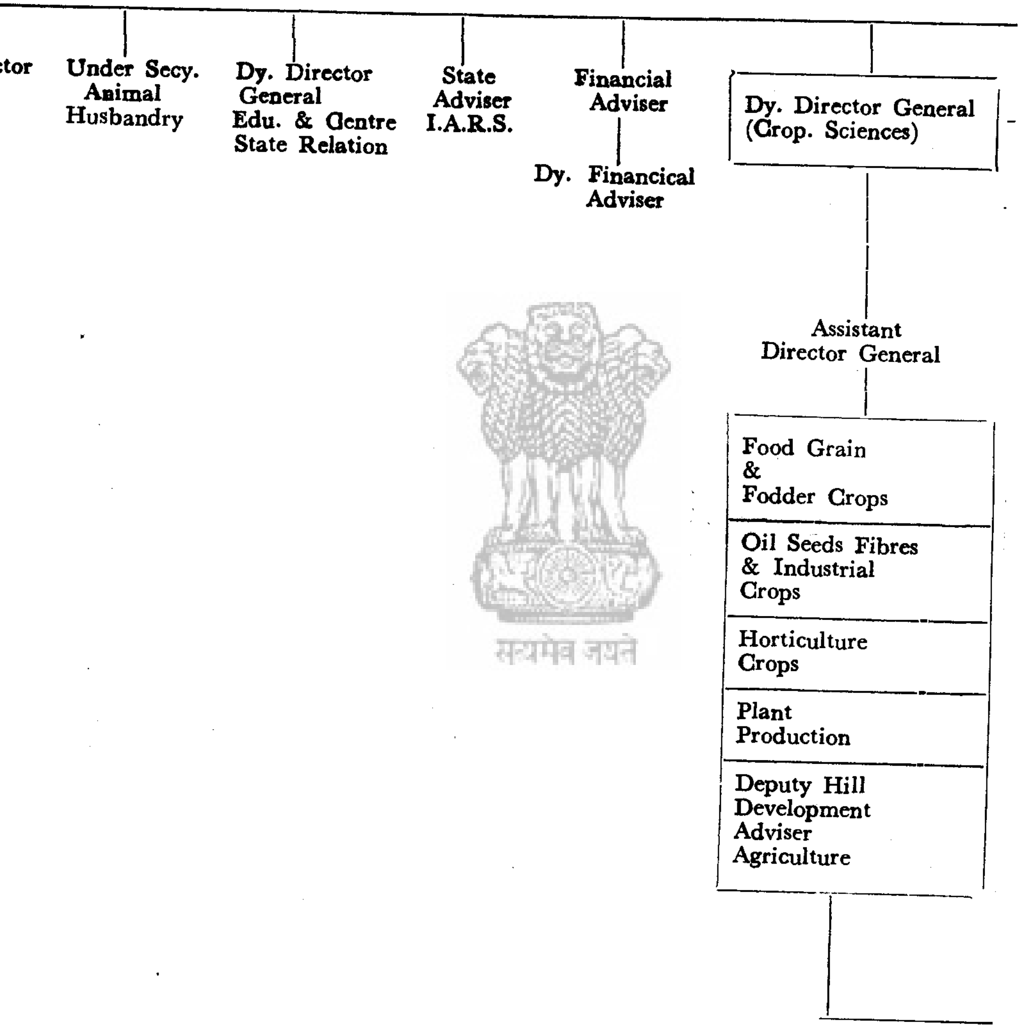
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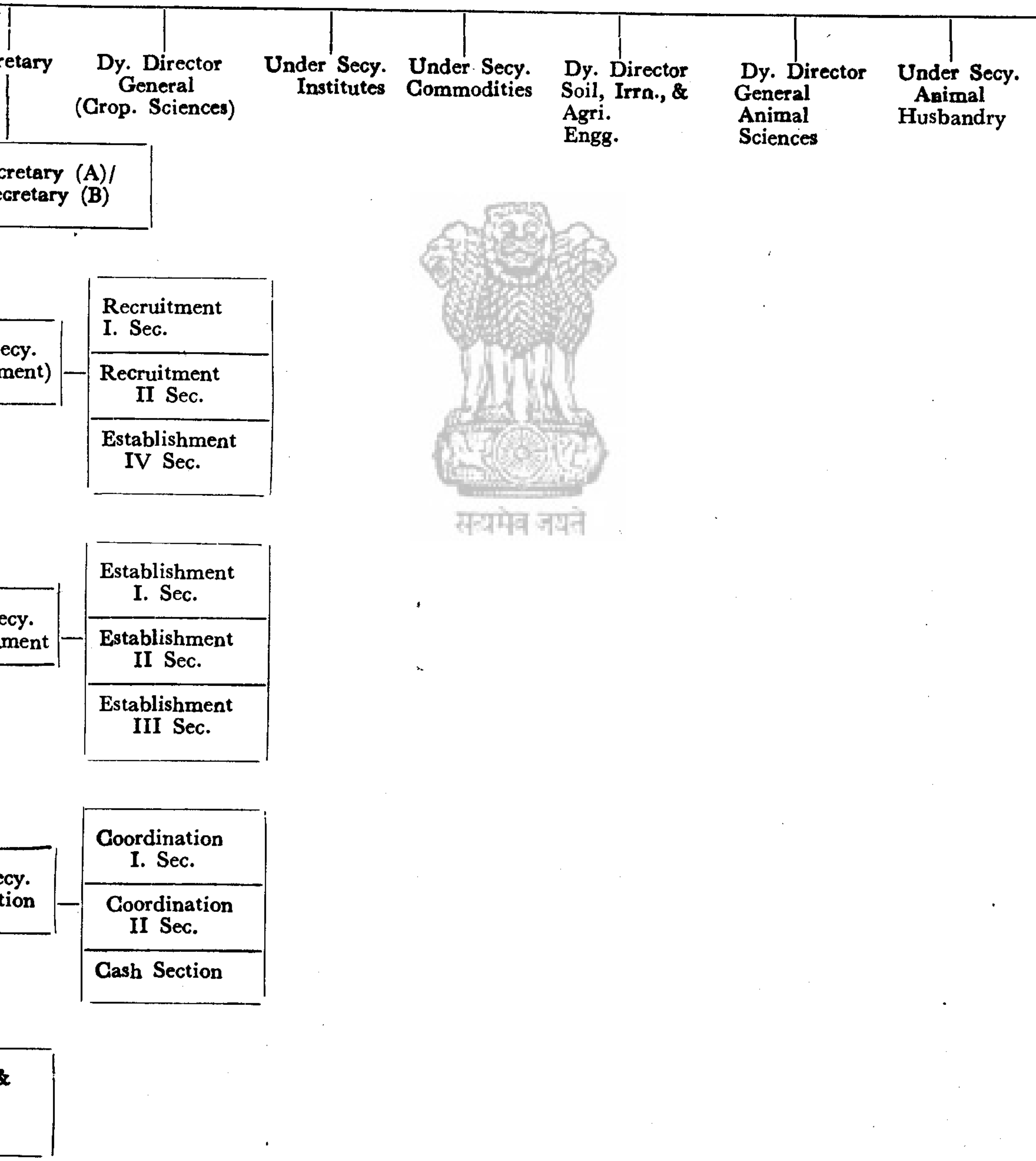

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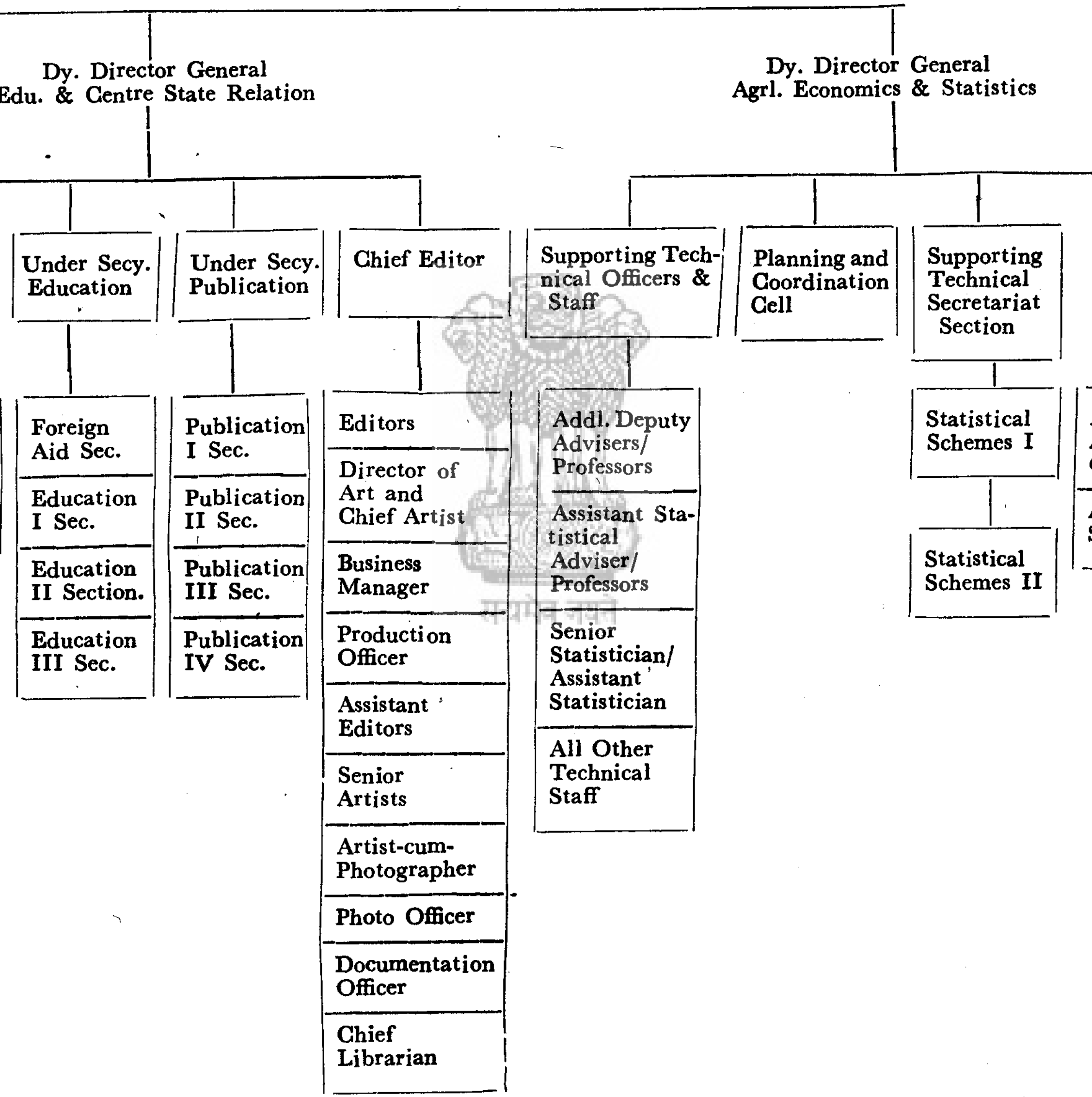
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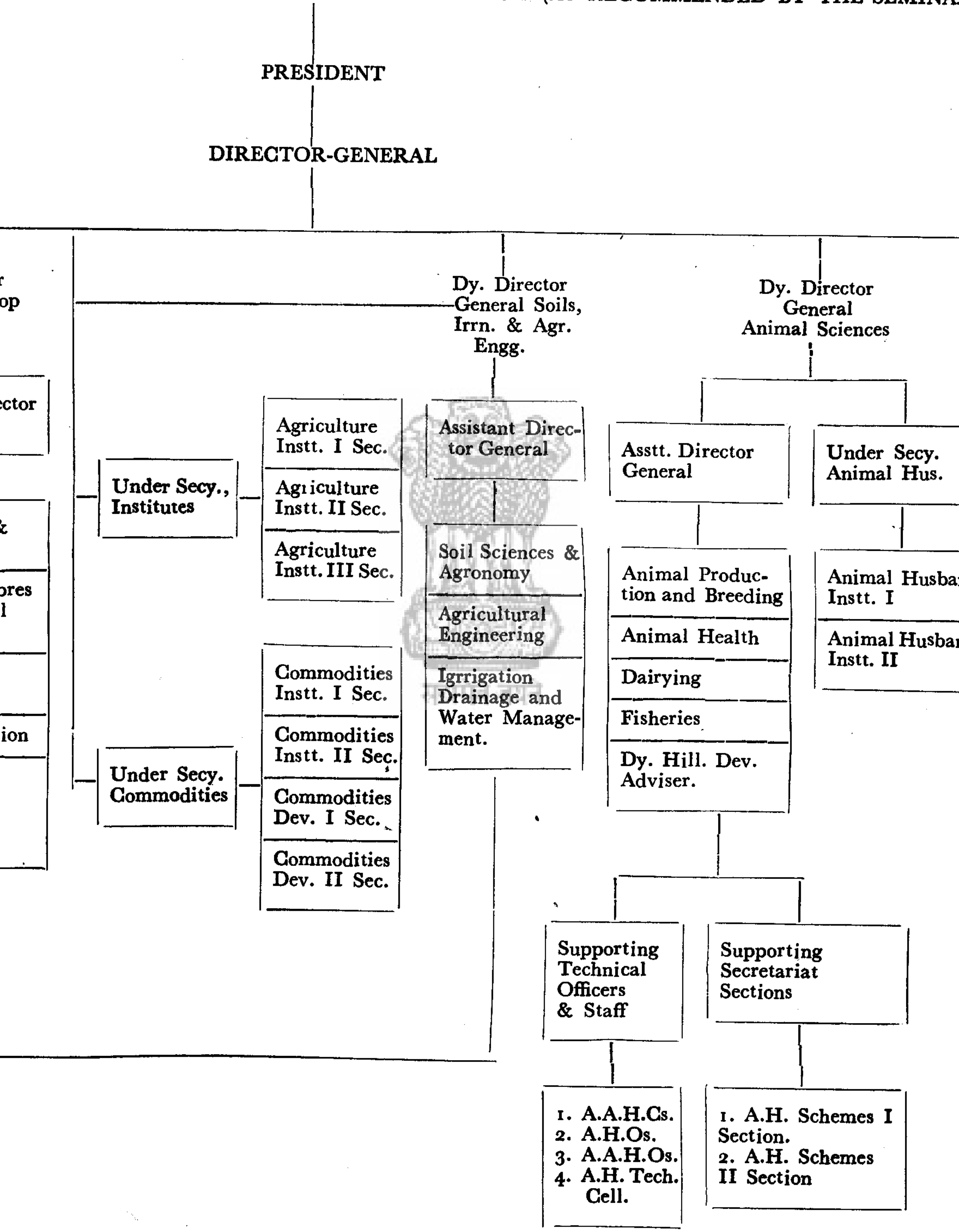
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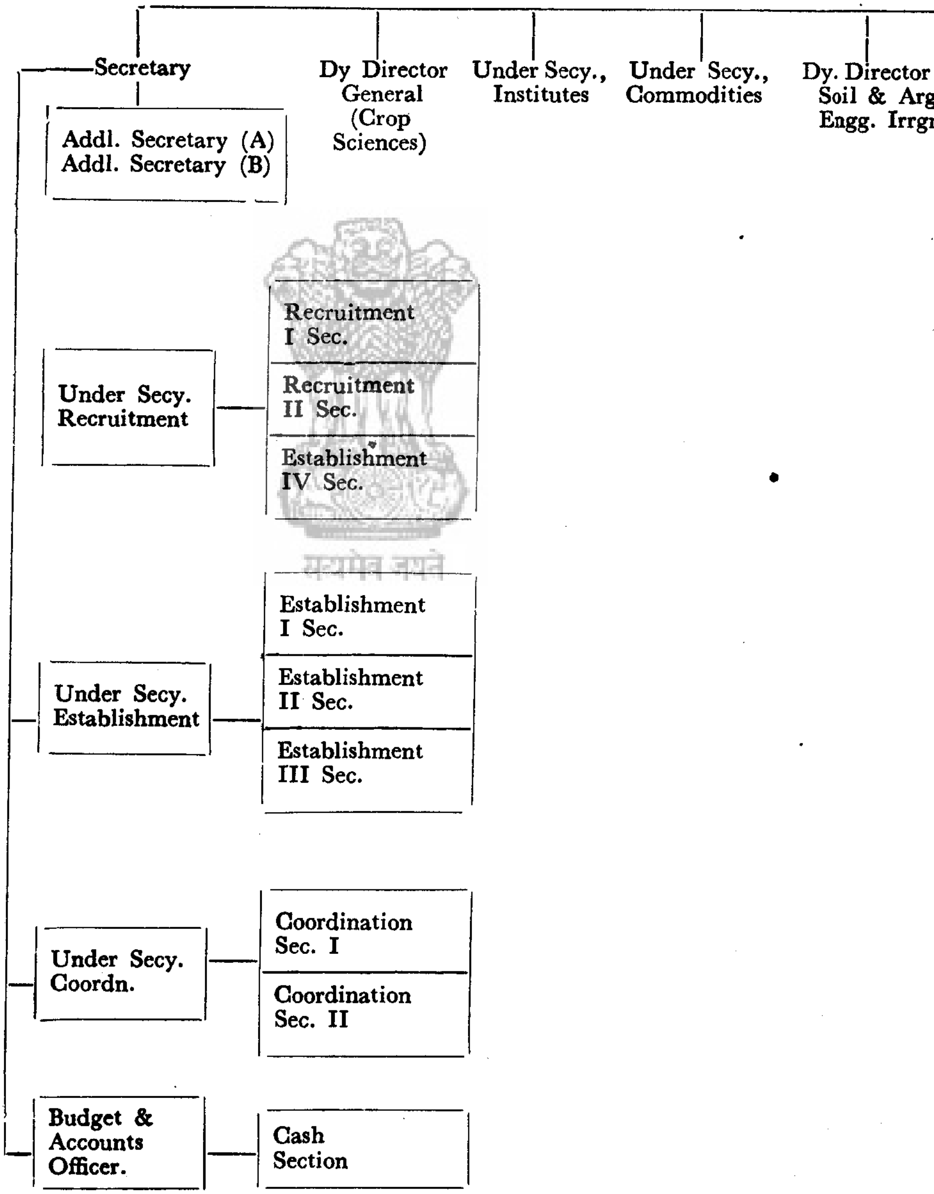
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Joint Secretary (IM)

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- ty Commissioner (Seeds)
  - Seeds Div.
- Joint Commissioner (MI)
  - Minor Irrigation Division
- Joint Commissioner (PP)
  - Plant Protection Division
- Deputy Commissioner (Mech.)
  - Machinery & Supply Div.
- Deputy Secre
  - Minor Irrigati Plant Protecti Admn. Bran

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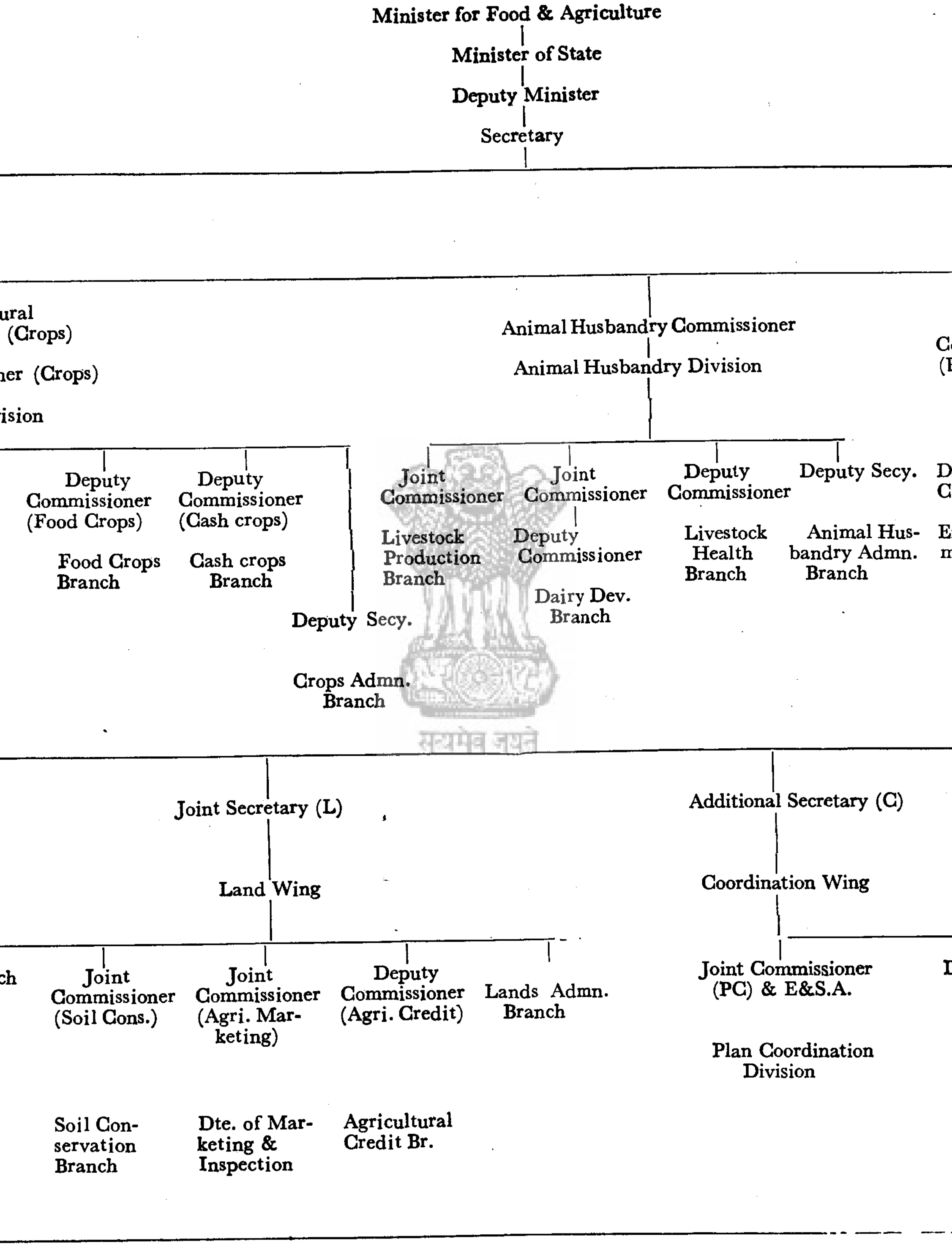
- Secretary (A)
  - el Division
- Joint Secy. (SL)
  - Joint Commissioner (State Liaison)
    - State Liasion Unit
- Economic & Statistical Adviser (Joint Commissioner (PC) in the Department)
  - Directorate of Economics & Statistics including Economic Advisory Cell
- Extension Commissioner
  - Directorate of Extension & Training
- Director General (ICAR)
  - Indian Council of Agricultural Research
- Chairman tural Price missio
  - Agricultur Prices Co sion (Atta Office)

ORGANISATION CHART OF THE DEPARTMENT OF AGRICULTURE



*At present held by Additional Secretary.